

7/30/02

SUBJ: GENERAL AVIATION OPERATIONS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits new, updated, and revised portions of the handbook.

2. DISTRIBUTION. This change is distributed to all addresses on special distribution list ZFS-870. An electronic message will be disseminated to Flight Standards employees (principally to aviation safety inspectors, which this change affects) to indicate when this change is electronically published, which chapters are affected, and which bulletins are incorporated and will provide the Universal Resource Locator (URL): <<http://www.faa.gov/avr/afs/faq/8700/8700.html>>. (There will be simultaneous electronic publication on the appropriate FAA Intranet site.) The public, industry groups, and other DOT/FAA offices can also access the updated chapters at this URL.

3. EXPLANATION OF CHANGES. This change to the 8700.1 handbook uses change bars to indicate updates and additional statements to clarify existing policies. Paragraph numbering changes or reference changes of FAR to 14 CFR are not signified by change bars. Filled out samples of Federal Aviation Administration (FAA) forms are replaced only for visual clarity. Changes to these chapters are updates to: terminology used to clarify existing policy, paragraph numbering to follow a sequential pattern, paragraph formatting, and clerical changes. Changes also include the incorporation of a Flight Standards handbook bulletin for General Aviation and Commercial Division (HBGA). Existing policies and regulations remain unaffected with this change.

a. Volume 1, Chapter 7, Automated Operations Specifications Subsystem (OPSS).
New chapter.

b. Volume 2:

(1) Chapter 31, Issue/Renew/Rescind a Statement of Acrobatic Competency.
Editorial updates.

(2) Chapter 48, Issue a Certificate of Waiver or Authorization for an Aerobatic Practice Area or an Aerobatic Contest Box. Editorial updates.

(3) Chapter 49, Issue a Certificate of Waiver or Authorization for an Aviation Event.
Editorial updates.

(4) Chapter 50, Surveillance of an Aviation Event. Incorporates a reference correction in HBGA 99-11, Inspector Comportment while Conducting Surveillance Activities at Public Aviation Events.

(5) Chapter 115, Introduction to Part 137 Related Tasks. Revised to reflect current policy and guidance.

(6) Chapter 116, Conduct Certification of a Part 137 Operator. Revised to reflect current policy and guidance.

(7) Chapter 117, Conduct a Part 137 Base Inspection. Revised to reflect current policy and guidance.

(8) Chapter 118, Administer a Knowledge and Skill Test to an Agricultural Pilot. Revised to reflect current policy and guidance.

(9) Chapter 119, Inspect a Part 137 Dispensing Operation. Revised to reflect current policy and guidance.

(10) Chapter 120, Evaluate a Part 137 Congested Area Operations Plan. Revised to reflect current policy and guidance.

(11) Chapter 121, Monitor a Part 137 Congested Area Plan. Revised to reflect current policy and guidance.

(12) Chapter 122, Inspect a Part 137 Satellite Site/Facility. Revised to reflect current policy and guidance.

c. Page Changes, Volume 2:

(1) Chapter 34, page 34-8. Editorial corrections.

(2) Chapter 44, page 44-18. Editorial corrections.

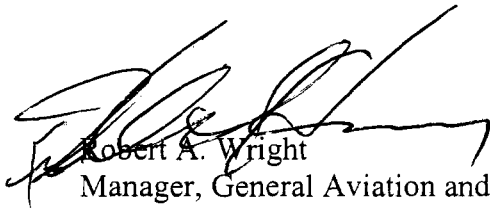
4. DISPOSITION OF TRANSMITTAL. This transmittal is to be **RETAINED AND FILED IN THE BACK OF THIS HANDBOOK** until it is superseded by a new basic order.

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CHAPTER 7. AUTOMATED OPERATIONS SPECIFICATIONS SUBSYSTEM (OPSS)

1. GENERAL.

A. Standard and Non-Standard. The automated operations specifications subsystem (OPSS) consists of standard operations specification (OpSpecs) paragraphs developed by Washington Headquarters as well as nonstandard paragraph. Standard paragraphs and any subsequent revisions are first coordinated within the FAA and then with appropriate industry organizations. After this coordination, the standard paragraphs are incorporated into the automated OpSpecs computer software. The OPSS is programmed to provide only those OpSpecs paragraphs which are applicable to a particular type of operation. When the appropriate standard paragraphs have been selected and all the required information has been entered into the OPSS, a complete set of OpSpecs can be printed specific to the particular operator and type of operation.

B. General Guidance. This chapter provides general direction and guidance to inspectors concerning actions necessary to generate a complete set of OpSpecs. This chapter also provides general information on the OPSS, such as control of standard paragraphs, use of color, and procedures for amending standard paragraphs. The OPSS is designed for generating automated OpSpecs to allow inspectors to collect and record appropriate information necessary for issuing required OpSpec paragraphs as well as authorizing the optional paragraphs as listed on OpSpec A004. Before attempting to enter information directly into the OPSS, one should be familiar with the OPSS and the most current OPSS user's manual.

(1) Specific task chapters involving OpSpecs in Order 8700.1, volume 2 will reference volume 1, chapter 7 when generating or revising OpSpecs for general aviation operators who can be issued OpSpecs.

(2) This chapter also provides general information for the subsystems within the OPSS. These subsystems contain the Emergency Airworthiness Directives, Exemptions, Title 14 of the Code of Federal Regulations (14 CFR) part 298, Exemptions for Air Taxi and Commuter Air Carrier Operations.

2. DYNAMIC INFORMATION SYSTEM (DIS).

A. Critical Fields of Information. The OPSS contains the information required for the Dynamic Information System (DIS). Before OpSpec paragraphs can be processed, certain fields of information must be provided to the OPSS. These critical fields of information must be current for the OpSpecs to be technically accurate. The fields of information under the Certificate Holder menu option are used in the OpSpec paragraphs when the user is prompted to select data for individual OpSpecs. The DIS consists of the following data fields for each selected Certificate Holder's information:

(1) *Personnel.* This area contains basic and generally static information about the certificate holder or air operator. The information fields include FAA recognized and required (by 14 CFR) positions titles, their names, and the company's equivalent position title for the following examples. (The OpSpecs into which these go are indicated in parentheses.)

- AD Notification Representative (A047)
- Director of Operations (A006)
- Chief Pilot (A006) (part 133 requires)
- Chief Inspector (A006)
- Director of Maintenance (A006)
- Director of Safety (A006)
- Agent for Service (A007)
- Other Designated Persons (A007)

(2) *Aircraft Authorization.* This area contains specific information about the aircraft the operator is authorized to use and specific conditions for the operator. This information is used in OpSpecs A003, D085, and any other OpSpecs that require the insertion of aircraft for authorization. Information that is collected includes:

- (a) Aircraft Make/Model/Series
- (b) Aircraft Manufacturer
- (c) Nose Number (if applicable)
- (d) Aircraft Serial Number

(e) Specific regulation that the aircraft is being operated under:

- Title 14 CFR parts 91, 125, 133, 137, 141, 142

(f) Specific Section of 14 CFR part 119 that identifies the type of certification basis:

- Title 14 CFR § 119.23(a) or part 125.

(g) Kind of Operation:

- On demand

(h) Configuration of the Specific Aircraft:

- Pax & Cargo, Passenger, All Cargo, Combi

(i) Noise Stage (if applicable)

(j) Seats Demonstrated (evacuation demonstration under 14 CFR parts 25 and 125)

(k) Seats Approved (mini-evacuation demonstration that is operator-specific)

(l) Flight Attendants (required number)

(m) Class of Operation:

- Amphibian, HEL (helicopter), MEL (multi-engine land), MES (multi-engine sea), MEL/MES (both), SES (single engine-sea), SEL (single-engine land), SEL/SES (both)

(n) En Route Type:

- IFR, IFR/VFR, VFR

(o) Condition:

- Day Only, Day/Night

(p) Civil Reserve Aviation Fleet (CRAF):

- Medical, Floor, Door

(q) Remarks section that records and identifies multiple comment. This information must be complete and accurate since the OPSS uses this information for standard OpSpecs A001, A003, and D085.

(3) *Principal Inspectors.* This area contains the names of principal inspectors specific to the certificate holding district office (CHDO) to which the OPSS is defaulted. This area is used to update the specific principal inspectors that are assigned to a specific certificate holder or air operator. This information will be used when the OpSpec paragraphs are ready to be signed.

(4) *Air Operator Authorized Areas.* This area is where the information is collected for insertion into the operator's approved geographic areas of operations for OpSpec B050. It is used by other district offices (other than the CHDO) who have a surveillance work program for the operator in their respective geographic areas of responsibility.

3. REQUIRED OPERATIONS SPECIFICATIONS. With the development of the OPSS, specific OpSpec paragraphs for a particular operator operating in accordance with certain 14 CFR parts are automatically extracted from the databases. The required OpSpec paragraphs are programmed to automatically move from:

A. The standard OpSpec paragraphs for 14 CFR parts 91, 121, 125, 129, 133, 135, 137, 141, and 142 fixed wing and rotorcraft operations are divided into the following six parts. Each part contains standard paragraphs that have the potential of being consecutively numbered from 001 to 999. Approval of all OpSpec paragraphs may be indicated by the signature of the principal inspectors or the CHDO manager who may sign for any of the principal inspectors.

(1) *Part A.* Part A paragraphs are generally considered to be both airworthiness and operations paragraphs. Contents of these paragraphs must be carefully coordinated between operations and airworthiness inspectors before approval. Approval of these paragraphs may be indicated by the signature of any one of the three assigned principal inspectors or as determined by individual CHDO policy.

(2) *Part B - En Route Authorizations, Limitations, and Procedures.* Operations inspectors are primarily responsible for preparing and approving authorizations in Part B.

(3) *Part C - Airplane Terminal Instrument Procedures and Airport Authorizations and Limitations.* Part C pertains to fixed wing airplanes only. Operations inspectors are primarily responsible for preparing and approving the authorizations in Part C.

(4) *Part D - Aircraft Maintenance.* Airworthiness inspectors are primarily responsible for preparing and approving the paragraphs in Part D. OpSpec D095, Minimum Equipment List Authorization must be carefully coordinated with operations inspectors.

(5) *Part E - Weight and Balance.* Airworthiness inspectors are primarily responsible for preparing and approving Part E. Part E must be carefully coordinated with operations inspectors.

(6) *Part H - Helicopter Terminal Instrument Procedures and Airport Authorizations and Limitations.* Part H are the rotorcraft equivalent to the Part C paragraphs for fixed wing operations. Operations inspectors are primarily responsible for preparing and approving the paragraphs in Part H. (Parts 121 and 125 operations will not have Part H in the databases.)

B. Training specifications are issued in accordance with 14 CFR § 142.5(b). For the purpose of the training specifications for 14 CFR part 142, training specifications will be replaced with the issuance of the computer generated generic OPSS form. Information regarding the applicability and issuance of training specifications is contained in 14 CFR § 142.11 and FAA Order 8700.1, volume 2, chapter 148. Training specifications have been realigned to correspond more closely to the numbering system employed for traditional OpSpecs issued to air carriers. This will provide a correlation when discussing the relationships that will be developed between the training center and its contracting operators. Part 142 OpSpecs are divided into the following 4 basic sections:

(1) *Part A - General.* Includes the issuance and applicability, definitions, authorizations and limitations summary, exemptions and deviations, flight training equipment and training location authorizations, and personnel listings.

(2) *Part B - Training Authorizations, Limitations, and Procedures.* Includes the approved curricula listings for individual airmen and air operators, special training programs and training agreements.

(3) *Part C - Airplane Terminal Instrument Procedures and Airport Authorizations and Limitations.* At this time this section only contains approved circling approach authorizations for specified simulators.

(4) *Part D - Maintenance Requirements, Limitations, and Procedures.* Includes flight training equipment maintenance and records requirements, Minimum Equipment List, and Simulator Component Inoperative Guide (SCIG) authorizations.

C. Title 14 CFR § 145.19 sets forth the requirements for repair station OpSpecs. The term

Certificate Holder is now used to include the holder of a repair station certificate as described in the OpSpecs. The OpSpecs lettering and numbering system used for repair stations is consistent with those in use by other 14 CFR certificate holders. The Repair Station OpSpecs (Form 8400-4-1) has been replaced with the issuance of the computer generated generic OPSS form. For more detailed guidance for issuing part 145 OpSpecs see FAA Order 8300.10, Airworthiness Inspector's Handbook, volume 2, chapter 161 and Airworthiness Handbook Bulletin (HBAW) 99-02, Guidance for Issuing the New Automated Operations Specifications for 14 CFR Part 145 Repair Stations. Part 145 standard OpSpec paragraphs are currently divided into three parts, each of which has an assigned letter designator and contains standard paragraphs.

(1) Part A OpSpec paragraphs are considered to be general paragraphs and are issued for both Domestic and Foreign Repair Stations.

(2) Part B contains special authorizations, limitations, and procedures that may be issued for both Domestic and Foreign Repair Stations. Currently, Part B only contains B050 which applies to foreign repair stations and provides for the authorization to conduct services under contract to a U.S. Carrier/ 14 CFR part 129 operator at a location other than the repair stations facility. (Reference Order 8300.10 volume 2, chapter 163, section 1, paragraph 7.)

(3) Part D contains specific authorizations, limitations, and procedures in OpSpec D100, for work to be performed at a place other than the Repair Station's Fixed Location. OpSpec D100 must list the work authorized and the approved Inspection Procedures Manual (IPM) must reference the work that the repair station is approved to perform away from the fixed location. This is the only means that the FAA has to approve that section of the IPM which describes how the repair station will perform work away from its fixed location.

D. The standard OpSpec paragraphs for 14 CFR part 133, Rotorcraft External-Load Operations, are in two parts only.

(1) *Part A - General.* Includes the issuance and applicability, definitions, authorizations and limitations summary, exemptions and deviations, personnel listings, Class D, IFR, and other general authorizations.

(2) *Part D - Aircraft Listing.*

E. The standard OpSpec paragraphs for the 14 CFR part 137 Agricultural Aircraft Operations, are divided into the following 3 parts.

(1) *Part A - General.* Includes the issuance and applicability, definitions, authorizations and limitations summary, exemptions and deviations, and personnel listings.

(2) *Part B - Any Waivers or Special Authorizations.*

(3) *Part D - Aircraft Listing.*

4. OPERATIONS SPECIFICATIONS CHECKLIST FOR OPTIONAL AUTHORIZATIONS.

OpSpec A004 is a series of statements considered to be a checklist for optional authorizations in the OPSS. When accurately selected in OpSpec A004, the checklist describes the particular optional authorizations for the specific operator for which OpSpecs are being prepared. OpSpec paragraphs that are required for specific operators will not appear in OpSpec A004 checklist. Some of these statements describe general information about the operator and certain statements describe the capability of the operator's aircraft. Other statements identify specific authorizations and/or limitations which apply or will apply to the operator.

A. When selecting the authorizations concerning the operator, they must be factually correct. When selecting a statement which describes a limitation or restriction, inspectors must be aware that the selection will result in OpSpec A004 showing the authorization of an OpSpec paragraph. Standard OpSpec paragraphs which provide special authorizations usually require special training curriculums, maintenance programs, and modifications to the operator's manuals and MEL. The OpSpecs A004 checklist includes both operations and maintenance items. All items must be thoroughly coordinated between operations and airworthiness inspectors. This coordination between operations and airworthiness inspectors is absolutely essential. The principal operations inspector, principal maintenance inspector, and principal avionics inspector must all agree that the selections made on the OpSpecs A004 checklist are accurate. Principal inspectors should also review the OpSpecs A004 checklist with the operator and agree that the selected statements accurately describe the operation.

B. After the selections are moved to the OPSS Workspace Grid, the appropriate standard paragraphs

can then be completed (reference the current OPSS User's Manual for details). The operations specifications table of contents can be printed in order to review all the standard paragraphs applicable to the operator and identifies paragraphs which provide special authorizations or prohibitions.

5. TEST OR TRAINING OPERATIONS SPECIFICATIONS. At each Flight Standards office, a set of practice or test OpSpecs can be generated. The user should refer to either the OPSS Student Training Manual or the OPSS User's manual for details to use this kind of exercise. This can be done when someone wants to practice using the OPSS and does not have a real operator in the database or does not want to experiment with the information on a real operator. From time-to-time the OPSS database managers will purge the testing and training databases.

6. DRAFTS OF OPERATIONS SPECIFICATIONS.

A. Inspectors should coordinate the draft OpSpecs with the operator. This coordination should involve the operator throughout the final preparation of the OpSpecs. This provides an opportunity to develop a common understanding between the operator and the FAA about the authorizations, limitations, and provisions in the OpSpecs. The operator must also be given the occasion to verify that added operator-specific information is correct.

B. After the draft OpSpecs have been reviewed and final corrections made, if any, the final OpSpec paragraphs can be printed and physically signed or if the operator has electronic signature capability, the OpSpec paragraphs can be electronically signed by both parties.

7. TABLE OF CONTENTS FOR OPERATIONS SPECIFICATIONS. The automated OpSpecs table of contents is an integral section of an operator's OpSpecs. The OPSS can automatically print a table of contents for each part individually.

8. AUTOMATED FEATURES AND SYMBOLOGY OF AUTOMATED OPERATIONS SPECIFICATIONS PARAGRAPHS.

A. The OPSS prints page numbers automatically on the OpSpec paragraph forms.

B. The OPSS automatically prints the words Control Date and the date the completed paragraph is

generated and printed. The control date is printed on the upper right corner of the OpSpecs form. This Control Date is for Headquarters control purposes only and must not be construed as an effective date. The OPSS prints the operator's certificate number in the lower right corner of the OpSpecs form and the operator's name will be printed on the bottom center of each page.

C. The OPSS provides a filter under the Tools pull-down menu and affects what is seen within the OPSS. The OPSS filter automatically displays, in color, those paragraphs that Headquarters has changed or archived and is intended to alert the users that a change has occurred.

9. MANDATORY AND NON-MANDATORY CHANGES. OpSpec changes are either Mandatory (Policy change) reflected by the color Red, or Non-Mandatory (minor text/format change) reflected by the color Green to alert the OPSS users of changes.

A. Whether it is a Mandatory or Non-mandatory change, an initial review of the revision history in the Guidance Subsystem should be the first step to determine what has caused the change. If the change occurs due to new policy, that new policy document will be referred to in the revision history and it will also be available for viewing, printing, or extracting from the OPSS for that OpSpec. None of the changes should go past 90 days without being re-issued or re-evaluated. It may require a review of the original certification or authorization process for the evaluation or re-issuance as relevant to the initiation of the change in color whether it is a Mandatory or Non-Mandatory change.

B. If a Mandatory change is made and the ASI determines that it affects any particular operator(s) then it is necessary to amend and re-issue the OpSpec paragraph as soon as appropriate or within 90 days for all those affected. A Mandatory change will typically be as a result of a policy or regulatory change in which the standard OpSpec paragraph itself has been revised by Headquarters.

C. If a Non-Mandatory change is made and the ASI determines that it affects any particular operator(s) then it is necessary to amend and re-issue the OpSpec paragraph as soon as appropriate or within 90 days for all those operator(s) affected. The Non-Mandatory changes may be due to a text/format change or as a result of the issuance of new or additional policy for that authorization but the standard language of the OpSpec paragraph itself did not change.

D. Archived OpSpec Paragraphs. OpSpec paragraphs are archived by Headquarters to either remove an OpSpec and accompanying guidance or to replace an existing OpSpec with a new one. Archived paragraphs and guidance are available for viewing only by adjusting the filter settings in the OPSS. Once an OpSpec paragraph has been archived it is disabled and not available for issuance but can be viewed only.

10. OPTIONAL TEXT.

A. Standard OpSpec Paragraphs. All the standard paragraphs in the OPSS have a provision which permits inspectors to include optional text. The OpSpec paragraphs that have optional text entered can be considered to be standard or non-standard depending upon the OpSpec authorization itself or the text that is added. The optional or additional text should relate to the subject matter of the standard paragraph or give a description of the approved program for that authorization. Inspectors may need to add optional or additional text as a subparagraph to address operator situations which are unique or to satisfy an operator's request to have a situation addressed in the OpSpecs. The provisions in the optional/additional text must not be less restrictive or contrary to the provisions in standard paragraphs developed by Washington Headquarters. If the optional/additional text or subparagraph added is more restrictive than the standard, inspectors must have justifiable reasons. A more restrictive provision results in unique treatment and could adversely affect an operator's competitive position. Examples of situations which may justify adding extra subparagraphs include the following:

(1) Certain OpSpec paragraphs are by nature ones that require the operator to explain or describe its own program or method of operations, or reference to the FAA-approved program but do not require approval by the Regional or Headquarters offices as nonstandard paragraphs. An example of this kind of OpSpec would be A008, Operational Control.

(2) An accident or series of incidents or enforcement actions which indicate a need for higher minimums, more stringent procedures, or prohibition of certain maneuvers.

(3) En route, terminal area, or airport situations which are unique to a particular operator or a small number of operators.

(4) Situations which require interim provisions such as airport construction, temporary obstacles, or temporary aircraft performance restrictions.

(5) Situations in which the operator does not train for certain maneuvers or procedures, resulting in a need to specify restrictions to provide for acceptable levels of safety.

(6) Self-imposed restrictions or procedures requested by the operator to be specified in the OpSpec paragraph.

B. Nonstandard OpSpec Paragraphs. Adding additional text as extra subparagraphs to a standard OpSpec paragraph that is less restrictive requires that the operator and the ASI follow the procedures for requesting a nonstandard OpSpec. Nonstandard OpSpec approval procedures are outlined in paragraph 11 below.

11. PROCEDURES FOR REQUESTING NONSTANDARD PARAGRAPHS.

A. Nonstandard Airworthiness or Repair Station OpSpec Paragraphs. Order 8300.10, volume 2, chapter 84, section 1, paragraph 13, provides guidance for the principal maintenance inspector (PMI) on issuing nonstandard paragraphs and will remain the same in that, nonstandard paragraphs must only be used in situations unique to a specific certificate holder.

B. Nonstandard Operator-Requested OpSpecs. Any nonstandard OpSpec request from the operator must be submitted to the principal inspector. It must contain enough information to support the request, such as a statement of why the operator cannot comply with the specific OpSpec paragraph; the airports specific to the operation; the comparable level of safety; pertinent navigational equipment; the type of aircraft; company procedures that ensure the safety of flight; and any other supporting documentation. Further, the request must include a copy of the OpSpec paragraph with the proposed nonstandard language inserted appropriately.

(1) The principal inspector must evaluate and substantiate the information. If the principal inspector does not concur with the proposal, a letter denying the application of the nonstandard paragraph with an explanation of the reasons for denial shall be forwarded to the operator.

(2) If the principal inspector concurs, the completed package shall be forwarded as described in

subparagraph D below. The package must include the recommendation, the operator's application, the supporting information, alignment with current national policy, the necessity of the proposed paragraph, and the proposed nonstandard verbiage.

C. Nonstandard OpSpec Request by the POI. The POI may need to add a subparagraph to an already existing standard OpSpec in order to address operator situations which are unique, or to satisfy an operator's request to have a situation addressed in a particular OpSpec. The provisions in those nonstandard subparagraphs should not be less restrictive to the provisions in standard paragraphs developed by Washington Headquarters. The nonstandard subparagraphs should relate to the subject matter of the main paragraph. Examples of situations which may justify adding extra subparagraphs are currently listed in the handbook. Anything outside the handbook guidance should be forwarded to Headquarters for prior approval.

(1) In those cases where the nonstandard additional text is less restrictive, Headquarters must authorize the proposed paragraph prior to issuance to the operator. The proposal must contain the same information as described above for operator requested OpSpecs.

NOTE OF CAUTION: Do not change or add anything to the language, format, or numbering of the standard OpSpecs as issued by Headquarters. If the standard OpSpec language is changed in any way, this may invalidate Headquarters policy.

(2) In the OPSS the nonstandard text is entered under the text tab which states, "Enter text for a nonstandard paragraph." For those currently using the old system, contact AFS-260 for the applicable OpSpec word document template, then add the nonstandard language as described below. Start the nonstandard language with a new subparagraph using italics to set off the nonstandard language. For example:

"e. Notwithstanding subparagraph [insert appropriate subparagraph reference, i.e. "c(5)"] above for operations [*insert appropriate language, i.e. "that are conducted solely within the state of Alaska" or "conducted at Example Airport"*], the highest of the following minimum altitudes apply...."

D. When a nonstandard subparagraph is requested, the principal inspector forwards a transmittal letter and the supporting documentation for the request with a copy of the whole OpSpec paragraph and the requested nonstandard verbiage as shown above, to the appropriate Regional Flight Standards Division. If the Regional Flight Standards Division concurs with the principal inspector, it shall forward its response to the appropriate Flight Standards Headquarters division for review. Once the determination is made at the Headquarters level, a notification will be sent to the Regional Flight Standards Division who will in turn forward it to the requesting principal inspector. If the response is a concurrence to the proposed nonstandard text, the principal inspector can authorize the nonstandard text by entering it into the OPSS for that OpSpec and issue it to the operator. The OPSS allows for the nonstandard text of each OpSpec to be evaluated to determine if other operators are similarly affected and whether the standard paragraph needs revision.

E. Another type of nonstandard paragraph should only be considered when the subject matter does not relate to any standard paragraph and it would be inappropriate to add the information as additional text or proposed OpSpecs that either need guidance or if other operators are similarly affected and whether a new standard paragraph needs to be developed for nationwide implementation. These can be sent electronically to AFS Headquarters and requested to be inserted into the OPSS database for use. These special nonstandard OpSpec paragraphs will be inserted into the appropriate part using a large number and an N after the number. Examples would be: A321N or B301N.

F. In order to expedite the process, Headquarters' divisions may accept the completed package as attachments through electronic mail as long as the hard copy package is subsequently forwarded to the appropriate division. Prior to sending it electronically, contact the respective division to ensure that electronic processing is acceptable and to ensure proper coordination.

12. PRINTING AUTOMATED OPERATIONS SPECIFICATIONS. After an OpSpec has been reviewed, verified for accuracy, and coordinated with the operator, it can be printed for signature or it can be electronically transmitted for electronic signature.

Authorized revisions should be made activate and moved to the Certificate Holders Document screen before printing. A single paragraph or a selected set of OpSpec paragraphs may be printed with or without the Table of Contents in each part.

13. OPERATOR'S RECEIPT OF APPROVED OPERATIONS SPECIFICATIONS. Refer to guidance in Order 8400.1, General OpSpec Guidance for Volume 3, Chapter 1, Section 1, 2, and 7.

A. After an OpSpecs paragraph has been approved by the FAA, two copies of the OpSpec paragraph shall be forwarded to the operator with a letter. This letter must identify the part, paragraph and any associated amendment numbers. This letter must also state that the two copies are enclosed, request that the operator sign and date both copies, and return one copy to the CHDO. When the operator signs both copies, he acknowledges that he has accepted the conditions and limitations and agrees to comply with the specifications appearing on the OpSpecs.

B. Principal inspectors shall keep a current, signed copy of all OpSpec documents including the table of contents on file in the CHDO. The OpSpecs paragraphs that are currently in effect for the operator shall be filed together. Superseded, surrendered, or revoked OpSpec paragraphs and table of contents shall be retained in the CHDO office for at least 5 years. If an operator's certificate or OpSpecs are surrendered or revoked, the OpSpecs shall be retained in the district office files for at least 5 years.

14. TRAINING SPECIFICATIONS IN CORRELATION TO OPSPECS. Information regarding the applicability and issuance of training specifications is contained in 14 CFR § 142.11 and FAA Order 8700.1, volume 2, chapter 148. Training specifications are issued in accordance with § 142.5(b). For the purpose of the training specifications for 14 CFR part 142, training specifications will be synonymous with OpSpecs, and OPSS Form 8400-8 contained within the new automated OPSS will be used. Training specifications have been realigned to correspond more closely to the numbering system employed for OpSpecs. This will provide a correlation when discussing the relationships that will be developed between the training center and its contracting operators.

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CHAPTER 31. ISSUE/RENEW/RESCIND A STATEMENT OF ACROBATIC COMPETENCY

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1578

2. OBJECTIVE. The main objective of this task is to determine whether to issue an FAA Form 8710-7, Statement of Acrobatic Competency (figure 31-1) to an applicant. Completion of this task results in the issuance, denial, or in some cases the rescission, of a Statement of Acrobatic Competency.

3. GENERAL.

NOTE: As per volume 1, chapter 1, section 2, page 1-7, paragraph 3 of this handbook, no regional supplements to aviation event policy are permitted.

A. Requirements. By Federal Aviation Administration (FAA) policy, a pilot who wishes to perform aerobatics or certain other flight operations at a public aviation event (airshow) must possess a valid FAA Form 8710-7, or Transport Canada Aviation (TCA), Form 26-0307, Statement of Aerobatic Competency.

(1) This requirement is enforced by the special provisions that are part of the FAA Form 7711-1, Certificate of Waiver or Authorization, issued by the FAA for the event.

(2) A pilot obtains an FAA Form 8710-7 by successfully completing an aerobatic competency evaluation in accordance with the provisions of an FAA-accepted, industry aerobatic competency evaluation program and given by an industry-approved aerobatic competency evaluator.

B. Aerobatic Competency Evaluation Program. The aerobatic competency evaluation program has been in use for several years.

(1) In the past, most pilots found it advantageous to simply go to the local FAA district office for an annual evaluation or renewal instead of using an

industry evaluator for peer review and recommendations.

(2) FAA found it necessary to appoint inspectors in each office to conduct these evaluations. However, the FAA was not always able to designate an adequately trained inspector who had related experience. Consequently, flight evaluations were sometimes inequitable.

(3) Efforts to correct these inadequacies revealed that it was not cost-effective to attempt a nationwide training program for inspectors in this specific task, because of the relatively low demand for the evaluation.

(4) Other safeguards built into the airshow environment have prevented the public from being placed at any undue risk. However, 12 performing pilots suffered fatal accidents within one year. Although the number of accidents was generally no greater than in previous years, and many of the accidents did not take place at an airshow, the accidents did appear to be related to aerobatic competency. These accidents served as a catalyst toward more aggressive evaluation of the aerobatic competency of airshow pilots.

(5) It is generally agreed that the level of safety of any segment of the industry is critically dependent upon that industry's assuming responsibility for itself and its safety programs. In this instance, the airshow industry was very proactive in its steps to alleviate future events that would reflect negatively on general aviation. Within a very short time, two industry groups proposed a revamping of the evaluator program to include new techniques and procedures.

(6) The most encouraging part of the proposed program was that, for the first time, there would be a well-orchestrated program that would directly effect virtually all active airshow pilots in the U.S. and Canada. Moreover, the industry is providing a database of information on airshow pilots and their competency checks. Such a fund of information is unprecedented, and the program far exceeds the FAA's

capabilities for action in light of other priorities. This action will significantly advance airshow safety with little cost to the public.

(7) The FAA is convinced that industry evaluators are people who are credible and dedicated to fulfilling their duties to conduct peer review, counsel, and make appropriate recommendations to the FAA.

NOTE: The terms aerobatic and acrobatic are synonymous.

4. AEROBATIC COMPETENCY. In order for a pilot of a civil aircraft to perform aerobatic and certain other maneuvers at air shows authorized by FAA Form 7711-1, Certificate of Waiver or Authorization, the pilot must have a valid FAA Form 8710-7, Statement of Acrobatic Competency, or a TCA Form 26-0307, Statement of Aerobatic Competency, in his/her possession.

A. Validity. Either of these forms must have been issued within time frames set forth in the industry program, or as directed by AFS-800.

B. Not Required. FAA Form 8710-7 is not required if a pilot is competing in an aerobatic contest that is not associated with an airshow, if a pilot is practicing in an aerobatic practice area authorized by FAA Form 7711-1 for that specific purpose, or for closed course air racing.

C. Aerobatic Flight Demonstrations. Individuals requiring a Statement of Acrobatic Competency will be referred to an industry evaluator such as those designated by the International Council of Air Shows, Inc. (ICAS) or the Experimental Aircraft Association (EAA) Warbirds of America. An aerobatic competency evaluator (ACE) will forward a written recommendation to the FAA district office through the appropriate organization. The ACE will also recommend standard limitations to an individual's Statement of Acrobatic Competency based upon observed performance (figure 31-2).

D. Rotorcraft. Aerobatic flight demonstrations by rotorcraft are evaluated only by FAA personnel designated by AFS-800. Non-aerobatic formation flight in rotorcraft can be evaluated by an industry ACE.

5. ISSUANCE OF A STATEMENT OF ACROBATIC COMPETENCY. An inspector issues a Statement of Acrobatic Competency upon an applicant's successful completion of an oral examination and, if required, a flight demonstration. The examination and demonstration are conducted by an industry ACE. The evaluation procedures and policy are devel-

oped by ICAS and the EAA, and subsequently accepted by the FAA. The ICAS ACE manual can be obtained at www.airshow.org.

A. ACE's Role. After requesting the required information about the pilot from an industry organization, the industry ACE conducts the evaluation. After the evaluation is completed, the industry ACE notes his/her recommendations on the application form.

B. Application Processing. Generally, the completed application is forwarded to the industry organization for processing in a timely fashion. The organization records the information, then sends the application to the Flight Standards District Office (FSDO) closest to the applicant's mailing address. Applications from Canadian airmen will be forwarded to the FSDO nearest to the ICAS office for processing. The cover letter should also include a draft card for the applicant.

C. Application for Issuance/Renewal. When a copy of the industry application for issuance/renewal is received by the FSDO after the evaluation was completed by an industry ACE, the FAA Form 8710-7 will not be issued to the applicant until completion of the necessary coordination with the appropriate industry group, which is indicated by a cover letter from ICAS or EAA Warbirds with the application or, if the application is received without an industry group cover letter, by contacting ICAS at (301) 519-6800 or EAA Warbirds at (414) 426-4874 for confirmation. Also, in those rare instances when the evaluation is conducted by an ACE inspector, FAA Form 8710-7 will not be issued to the applicant until the ACE inspector has completed the necessary coordination and background records review with ICAS who maintains records on all individuals who hold FAA Form 8710-7. FAA inspectors who are not designated as ACE inspectors will not conduct aerobatic competency evaluations. Inspectors who are designated as ACE inspectors may in rare instances conduct aerobatic evaluation and subsequently issue FAA Form 8710-7 only after receiving prior approval from the Flight Standards division in the appropriate regional office and coordinating with ICAS. In such a case, they will follow all procedures and adhere to all requirements of one of the industry evaluation programs.

D. Reissuance or Renewal. An evaluation by an ACE is required for reissuance or renewal of a Statement of Acrobatic Competency.

E. Forms. FAA Form 8710-7 (figure 31-1) is used to issue a Statement of Acrobatic Competency. This form expires in accordance with industry guidelines.

F. Limitations and Authorized Aircraft. Placement and removal of limitations and authorized aircraft is

based upon recommendations made by the industry ACE during initial or subsequent evaluations.

G. District Office Considerations. Applicants for the Statement of Acrobatic Competency may also be applying for a waiver for an aerobatic practice area in a location convenient to the ACE. Each office should be prepared to facilitate the process for obtaining a waiver required to conduct an evaluation. (See volume 2, chapter 48.)

6. REEVALUATION OF COMPETENCY TO HOLD, AND/OR RESCISSION OF A STATEMENT OF ACROBATIC COMPETENCY. In accordance with FAA policy, after successful completion of an evaluation, an industry ACE evaluator recommends to the FAA that an FAA Form 8710-7, Statement of Acrobatic Competency, be issued to an airshow performer. Therefore, when safety concerns so dictate, it is also FAA policy that the FAA may require reevaluation of a performer's competency to hold and/or rescind a performer's FAA Form 8710-7.

A. High Standard of Safety. These actions are only intended to achieve a high standard of safety by assuring future compliance with FAA safety rules and policy. They are not intended to be punitive, and are separate, apart from, and may not necessarily relate to any enforcement action or the final determination of probable cause of an accident.

(1) Anytime an airshow performer's actions give the FAA, ICAS, or EAA Warbirds of America reason to doubt their aerobatic competency, the performer's competency to hold an FAA Form 8710-7 should be reevaluated and/or rescinded.

(2) When an airshow performer is involved in an accident or incident that occurs during any portion of an airshow routine at a public aviation event conducted in accordance with a FAA Form 7711-1, Certificate of Waiver or Authorization (figure 31-3), the performer's competency to hold a Statement of Acrobatic Competency is in doubt.

(a) An accident or incident is defined by Title 49 of the Code of Federal Regulations (49 CFR) section 830.

(b) Concerning the definition of "incident" in 49 CFR section 830, special emphasis is placed on the safety and well being of spectators as affected by the "safety of operations."

(3) Any incident that occurs during any portion of an airshow routine that negatively affects the safety

of spectators, regardless of damage or injury, shall be grounds to doubt a performer's aerobatic competency.

(4) In a large part, aerobatic competency as it relates to the issuance of FAA Form 8710-7 equates to airshow performing safely during the performer's entire routine, not just their skill at performing individual aerobatic maneuvers.

B. Reevaluation of Competency. Minor incidents such as isolated, momentary transgressions across an assigned show line or below a minimum altitude are not grounds for reevaluation but should be corrected by on-the-spot counseling and constructive criticism.

(1) Mitigating factors such as unforecast winds at altitude, etc. should also be considered. However, if the incident that gave reason to doubt the airman's competency is not of a serious enough nature that would require rescission of the performer's FAA Form 8710-7, it may still be necessary to require reevaluation of the performer's competency to hold the form.

(2) Concerning accidents or incidents at air shows, the FSDO that issued the FAA Form 7711-1 for the event shall, when appropriate, require reevaluation of the performer's competency to hold an FAA Form 8710-7 (figure 31-4). It is important that the performer complete the reevaluation in a reasonable but timely manner.

(3) For all reevaluations, ICAS or the EAA Warbirds will assign an evaluator. AFS-800, ICAS, and in the case of an FAA Form 8710-7 issued on the recommendation of the EAA Warbirds of America, both ICAS and the EAA Warbirds of America shall be notified of the request for reevaluation.

(4) Optionally, the performer can choose to surrender their FAA Form 8710-7. In that case, the surrendered FAA Form 8710-7 and copies of all correspondence shall be forwarded to the issuing FSDO and a copy sent to ICAS.

C. Rescission of FAA Form 8710-7. If the incident that gave reason to doubt the airman's competency is of a serious nature, it may be necessary to immediately rescind the performer's FAA Form 8710-7 pending reevaluation (figure 31-5).

(1) Any incident that occurs during any portion of an airshow routine that directly threatens the safety and well-being of spectators, regardless of damage or

injury, shall be grounds to rescind a performer's FAA Form 8710-7.

(2) Any incident that occurs during any portion of an airshow routine that arises from flagrant and willful disregard for FAA safety rules and policy and/or when a performer exhibits an attitude of recidivism concerning FAA safety rules and policy shall also shall be grounds to rescind a performer's FAA Form 8710-7.

(3) Concerning accidents or incidents at air shows, the FSDO that issued the FAA Form 7711-1 for the event shall immediately rescind the performer's FAA Form 8710-7. It is important that this be completed before the next opportunity for the performer to perform at a public event.

(4) Any decision to rescind an FAA Form 8710-7 should be coordinated with the FAA's National Airshow Coordinator in AFS-800.

(5) Also, at the written recommendation of ICAS or EAA Warbirds of America, the FSDO that issued a performer's FAA Form 8710-7 should also rescind it. AFS-800, ICAS, and in the case of an FAA Form 8710-7 issued on the recommendation of the EAA Warbirds of America, both ICAS and the EAA Warbirds of America shall be notified of the rescission.

D. Appeal. A performer who has been requested to submit to reevaluation and/or had their FAA

Form 8710-7 rescinded shall have the right to appeal this action in writing to the Division Manager of the General Aviation and Commercial Division, AFS-800, Flight Standard Service, in FAA headquarters, Washington, DC, 20591.

7. FAA AEROBATIC EVALUATIONS. All evaluations (initial and reissuance/renewal), except of rotorcraft and occasional checks dictated by unusual situations, must be referred to an industry organization that has developed an acceptable method of making recommendations of aerobatic competency to the FAA.

A. Rotorcraft Operations. At present, there are only a limited number of aerobatic rotorcraft operations. Rotorcraft operations are evaluated by FAA personnel approved by FAA headquarters.

B. FAA Aerobatic Competency Evaluators. FAA headquarters and regional offices will maintain a roster of FAA personnel who are skilled in evaluating airshow aerobatic competency as determined by the regional Flight Standards division. Occasionally these individuals will be called upon to help resolve unusual problems or situations. However, these evaluators will not conduct routine airshow aerobatic competency evaluations.

[PAGES 31-5 THRU 31-8 RESERVED]

SECTION 2. PROCEDURES

1. REQUIREMENTS. The issuance of a Statement of Acrobatic Competency requires an evaluation by an industry ACE such as those designated by ICAS or the EAA Warbirds. Although the evaluation program is administered by the industry, the FAA is the final authority on issuance of a Statement of Acrobatic Competency.

2. REFERENCES AND FORMS.

A. References.

- Advisory Circular 91-45, Waivers: Aviation Events
- International Council of Airshows ACE Program
- International Council of Airshows ACE Manual
- International Council of Airshows list of ACE's
- Experimental Aircraft Association Warbirds of America ACE Program Letter
- Experimental Aircraft Association Warbirds of America list of ACE's

B. Forms.

- FAA Form 8710-1, Airman Certificate and/or Rating Application (figure 31-2)
- FAA Form 8710-7, Statement of Acrobatic Competency (figure 31-1)
- FAA Form 7711-1, Certificate of Waiver or Authorization

3. PROCEDURES.

A. Obtain Application. An applicant for a Statement of Acrobatic Competency should contact an industry organization to obtain the industry application form. The individual will receive a numbered application form with an instruction sheet covering all necessary procedures. In the rare instance that the evaluation is to be conducted by the FAA, such as a rotorcraft evaluation or an evaluation dictated by an unusual situation and approved by the Flight Standards division in the regional office, an FAA Form 8710-1, Airman Certificate and/or Rating Application, should be appropriately completed by the applicant.

B. Schedule Evaluation. With the application, the individual also receives a copy of the checklists that

will be used for the evaluation. The individual contacts an appropriate ACE and schedules the time and location of the examination and demonstration.

C. FAA's Role. The local FSDO makes the final decision on each application based on the recommendation of the industry ACE. This office also issues the Statement of Acrobatic Competency, FAA Form 8710-7, to the successful applicant after coordination with the appropriate industry group.

D. Issue Certificate. After an application is approved, an inspector issues a Statement of Acrobatic Competency on FAA Form 8710-7. When issuing the certificate, the inspector should:

(1) list recommended maneuvers, altitude limitations, and approved aircraft on the reverse side of the form. (See figures 31-1 and 31-2.) More than one card may be required to list all approved aircraft;

(2) sign and date the form; the form is dated the date of the evaluation and expires in accordance with industry guidelines;

(3) make copies of the form for the office and district office files;

(4) forward the form to the pilot at the address shown in the cover letter. Do not forward a copy to AFS-760, Airman Certification Branch; and

(5) make the appropriate PTRS entry.

NOTE: Original copies of all evaluation documentation will be retained by ICAS.

4. TASK OUTCOMES. Completion of this task results in issuance, renewal, or denial (figure 31-6) of a Statement of Acrobatic Competency.

5. FUTURE ACTIVITIES.

A. The inspector could take part in an investigation as a result of an accident, incident, or violation of the regulations, and be called upon to rescind FAA Form 8710-7, or require reevaluation.

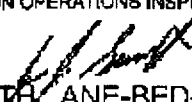
B. FAA Form 8710-7 may be rescinded based on the facts, conditions and circumstances of an accident or incident that raises doubt about the pilot's aerobatic competency.

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[PAGES 31-11 THRU 31-14 RESERVED]

FIGURE 31-1
FAA FORM 8710-7, STATEMENT OF ACROBATIC COMPETENCY

FRONT

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION STATEMENT OF ACROBATIC COMPETENCY	
PILOT	
J. J. JONES	
TYPE CERTIFICATE/NUMBER	
COMMERCIAL 1234567	
ISSUANCE DATE	EXPIRATION DATE
03-30-96	03-31-97
GENERAL AVIATION OPERATIONS INSPECTOR (Signature)	
 J. J. SMITH ANE-BED-FSDO	

FAA Form 8710-7 (5-78)

BACK

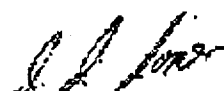
MANEUVER LIMITATIONS	
NONE	
ALTITUDE LIMITATIONS	AUTHORIZED AIRCRAFT
LEVEL II	PITTS SPECIAL
I understand that this statement of competency does not authorize deviation from FAR 91 except as defined by waiver thereto, or to the terms of Special Provisions contained in any waiver to FAR 91.	
PILOT (Signature)	
	

FIGURE 31-2
FAA FORM 8710-7 MANEUVER LIMITATIONS

The following is a listing of maneuver limitations for use in completing FAA Form 8710-7, Statement of Acrobatic Competency

A. ICAS Program

1. SOLO AEROBATICS
2. SOLO AEROBATICS - NO SUSTAINED INVERTED FLIGHT
3. FORMATION AEROBATICS
4. FORMATION AEROBATICS - NO INVERTED FLIGHT
5. SOLO AEROBATICS - NO VERTICAL MANEUVERS
6. SOLO AEROBATICS - LOOPS AND ROLLS ONLY/COMBINATIONS THEREOF
7. SOLO AEROBATICS - POSITIVE G MANEUVERS ONLY
8. CIRCLE THE JUMPER
9. NON-AEROBATIC FLIGHT IN AN AEROBATIC FORMATION
10. NIGHT
11. NIGHT PYRO
12. WING WALKING
13. CAR TOP LANDING
14. CAR TO PLANE TRANSFER
15. AERIAL TRANSFER
16. COMEDY
17. DOGFIGHT
18. DEADSTICK
19. INVERTED RIBBON CUT
20. Or as specified by the evaluator, and approved by the industry ACE committee.

B. EAA Warbirds Program (limited to Level 2 or higher)

1. LOOPS
2. ROLLS
3. LOOPS, ROLLS AND ANY COMBINATION THEREOF

FIGURE 31-3
FAA FORM 7711-1, CERTIFICATE OF WAIVER OR AUTHORIZATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION CERTIFICATE OF WAIVER OR AUTHORIZATION
ISSUED TO
ADDRESS
<p>This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.</p>
OPERATIONS AUTHORIZED
LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
STANDARD PROVISIONS
<ol style="list-style-type: none"> 1. A copy of the application made for this certificate shall be attached to and become a part hereof. 2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations. 3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein. 4. This certificate is nontransferable.
NOTE---This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.
SPECIAL PROVISIONS
Special Provisions Nos. _____ to _____ inclusive, are set forth on the reverse side hereof. <div style="text-align: right; margin-top: -10px;"> "See Attached" <input type="checkbox"/> </div>
<p>This certificate is effective from _____ to _____, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.</p> <p style="text-align: center;">BY DIRECTION OF THE ADMINISTRATOR</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> _____ (Region) </div> <div style="width: 45%;"> _____ (Signature) </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> _____ (Date) </div> <div style="width: 45%;"> _____ (Title) </div> </div>

FAA Form 7711-1 (7-74)

AFS Electronic Forms System - JeForm FormFlow - 12/1998

FIGURE 31-4
LETTER REQUIRING REEVALUATION OF ACROBATIC COMPETENCY

FAA Letterhead

Certified Mail - Return Receipt Requested

[date]

[performer's name and address]

Dear [performer's name]:

Investigation of the [accident/incident] which occurred at [location] on [date], gives reason to believe that your competency to hold an FAA Form 8710-7, Statement of Acrobatic Competency, is in question and that reevaluation of your qualification to be the holder of an FAA Form 8710-7 is necessary in the interest of safety. Therefore, pursuant to FAA policy you are requested to arrange for a reevaluation of your qualifications to hold an FAA Form 8710-7 within [number] days. An evaluator will be assigned to conduct this reevaluation by the industry organization that recommended the issuance of your current FAA Form 8710-7.

If, for valid reasons beyond your control, you are unable to be reevaluated at this time, please contact [IIC] as soon as possible so that a determination can be made as to whether a time extension may be granted.

Upon successful completion of an aerobatic competency evaluation, you may be issued another FAA Form 8710-7, Statement of Acrobatic Competency.

If you will not be conducting airshow performances in the foreseeable future and do not wish to be reevaluated at this time, you can surrender your FAA Form 8710-7, Statement of Acrobatic Competency to this office.

You can appeal this action in writing to the Division Manager, General Aviation and Commercial Division, AFS-800, 800 Independence Avenue, SW, Washington, DC, 20591.

(Please note that the incident which occurred on [date] is still under investigation to determine whether enforcement action is appropriate. If enforcement action is to be taken, you will be advised in a separate letter.)

Should you have any questions concerning this matter, please contact this office at [FSDO telephone number].

Your cooperation in this matter will be appreciated.

Sincerely,

[FSDO Manager]

cc: [ICAS and/or EAA Warbirds of America]

[National Airshow Coordinator, AFS-802]

FIGURE 31-5
LETTER RESCINDING A STATEMENT OF ACROBATIC COMPETENCY

FAA Letterhead

Certified Mail - Return Receipt Requested

[*date*]

[*performer's name and address*]

Dear [*performer's name*]:

This letter is to inform you that as of this date, your FAA Form 8710-7, Statement of Acrobatic Competency, is rescinded. Please return your FAA Form 8710-7 to this office at [*FSDO address*].

This rescission is based on [*the recommendation of [ICAS or the EAA Warbirds of America] [the events of [date of accident or incident]]*]. Upon successful completion of an aerobatic competency evaluation, you may be issued another FAA Form 8710-7, Statement of Acrobatic Competency.

You can appeal this action in writing to the Division Manager, General Aviation and Commercial Division, AFS-800, 800 Independence Avenue, SW, Washington, DC, 20591.

(Please note that the incident which occurred on [*date*] is still under investigation to determine whether enforcement action is appropriate. If enforcement action is to be taken, you will be advised in a separate letter.)

Should you have any questions concerning this matter, please contact this office at [*FSDO telephone number*].

Your cooperation in this matter will be appreciated.

Sincerely,

[*FSDO Manager*]

cc: [*ICAS and/or EAA Warbirds of America*]
[*National Airshow Coordinator, AFS-802*]

FIGURE 31-6
LETTER DENYING STATEMENT OF ACROBATIC COMPETENCY

FAA Letterhead

[*date*]

[*applicant's name and address*]

Dear [*applicant's name*]:

This letter is to inform you that your application for a Statement of Acrobatic Competency is denied.

The following items were unsatisfactory: (List all that apply under each item.)

Oral Examination

Preflight

Flight Demonstration

Should you have any questions concerning this matter, please contact this office.

Sincerely,

[*inspector who conducted the test*]

- Inverted-A, Inc.: Mini-simulator II C Models, (limited to 10 hours)
- Pacer Systems Corporation: MK II Models
- Gestic Electronics, Inc.: Spira 180 and 280 Models

C. For Use Under 14 CFR § 61.159(a)(3)(i)(iii). Regulatory authorization for pilot use of a level 1 FTD to acquire not more than 25 hours of simulated instrument time when given as instruction by an authorized ground or flight instructor as limited under this section:

- Aviation Simulation Technology, Inc.: AST 201 and 300 Models
- ATC Flight Simulator Company: ATC 112H, 510, 610, 710, 810, and 920 Models
- Frasca International, Inc.: 121, 122, 131, 132, 141, 142, 241, 242, 242T, and 342 Models
- Inverted-A, Inc.: Mini-simulator II C Models, (limited to 10 hours)
- Pacer Systems Corporation: MK II Models
- Gestic Electronics, Inc.: Spira 180 and 280 Models

D. Re-evaluation of Devices formerly considered GTD's.

(1) *Airplane Devices.* When information or circumstances indicate that the feature(s) of a device, formerly given conferred status and now classified as Level 1 FTD for which the FAA has authorized continued permissible use under the regulations, renders the device out of calibration as defined by the manufacturer, or incapable of performing its originally intended function, the device should be re-evaluated by the jurisdictional FSDO. Upon re-evaluation, if the device is found acceptable, its use under an FAA-approved training course outline or under other specific FAA authorization(s) should be reviewed to ensure full compliance with the regulations and information pertaining to the authorized use of that device provided in memo form to AFS-800. Should the device be found unacceptable for use previously authorized, the inspector should notify AFS-800 with details of the evaluation and any recommendations concerning the continued or permissible use of the device for consideration by AFS-800 and/or appropriate coordination with the manager of the National Simulator Program, AFS-205, Atlanta, Georgia.

(2) *Helicopter Devices.* A device replicating a helicopter and formerly authorized for use under the regulations prior to August 2, 1996, must be re-evaluated for use under regulations that became effective August 2, 1996. Effective that date, 14 CFR § 61.4(b) provides the regulatory basis for the continued use of that device as originally authorized. No Advisory Circular (AC) guidance such as that in AC 120-45A, Airplane Flight Training Device Qualification has been established for GTD's replicating a helicopter. However, the latter AC may provide helpful guidance that will assist in determining the continued permissible use of a helicopter device. When upon re-evaluation, the helicopter device is found to be acceptable for use as previously authorized, its use under an FAA-approved training course outline or under other specific FAA authorization(s) should be reviewed to ensure full compliance with the applicable regulations. Should the device be found to be unacceptable for use as previously authorized, a detailed report of the evaluation and any recommendations for the continued or permissible use of this device, should be submitted to AFS-800 for consideration. After appropriate coordination with the manager of the National Simulator Program, AFS-205, AFS-800 will determine what permissible use of the device is appropriate under 14 CFR § 61.4(b).

E. For use of a Device Formerly Considered a GTD. For any use of a device formerly considered a GTD other than as outlined herein or under the conferred status of AC 120-45, refer to volume 2, chapter 148.

F. The Use of Simulators (Approved According to AC 120-40) or Airplane Flight Training Devices (Approved According to AC 120-45) to Conduct § 61.58(a) (formerly § 61.58(a)(2) Pilot-in-Command (PIC) Proficiency Checks. Section 61.58(a) requires that to serve as PIC of an aircraft certificated for more than one pilot crewmember, the PIC must have completed a proficiency check in the particular type aircraft since the beginning of the 24th calendar-month before the month in which the pilot acts as PIC. Section 61.58(e) provides that the check or test required by this section may only be performed in a qualified simulator IAW applicable provisions set forth in the regulations. However, those devices formerly approved under AC 61-66 for the conduct of this proficiency check may continue to be used for that purpose.

7. QUALIFICATION AND APPROVAL OF NEW OR MODIFIED FLIGHT TRAINING DEVICES.

A. New training devices placed into service after August 2, 1996, and modifications to existing Level 1 FTDs are ineligible for conferred status under AC 120-45A, paragraph 14. Therefore these devices must be evaluated for level qualification in order to be approved for such use as deemed appropriate under the existing regulations. Three such devices have been evaluated by FAA and authorized for use under applicable regulations as Level 1 or higher FTDs:

- Emulations Systems Model ES-200, S#203 3130 Skyway Drive, Suite 309, Santa Maria, CA93455
- Frasca Models 242 and 135/R22, Frasca International Inc., 906 East Airport Rd. Urbana, IL 61801.
- Copies of letters issued authorizing specific use of these devices is maintained by AFS-800 in accordance with paragraph C.

B. After August 2, 1996, when a new FTD is to be qualified and approved for use in Levels 1 through 5 or a modification is made to an existing model of an FTD IAW AC 120-45A, paragraph 14b, the FSDO in whose jurisdiction that device is located will ensure that the appropriate reference data report (engineering data) pertaining to the qualification and approval of that device, and its authorized use under the applicable regulations, is provided to AFS-205 for review and concurrence in the qualification and approval of the device. Following concurrence by AFS-205, notification of approval in memo form must be sent to AFS-800 with concurrent issuing of FAA authorization for the use of the device.

C. AFS-800 will maintain an active list of all such devices subsequently qualified in Levels 1 through 5 and approved for use under parts 61, 141, and other applicable regulations. The following information is to be submitted to AFS-800 regarding FTDs qualified for use by FSDO inspectors in Levels 1 through 5:

(1) The name and address of the FTD manufacturer;

(2) The make/model, application FAA Systems Engineering Office/Aviation Medical Examiner and date of manufacture;

(3) The Level(s) for which the device is qualified;

(4) The specific maneuvers and/or procedures for which the device is authorized for use; and

(5) The 14 CFR sections believed applicable to the above authorized use.

D. This policy is necessary to permit Flight Standards to satisfy its oversight responsibility in providing clear and effective national policy guidance regarding the authorized use of the simulation technology represented by these devices. Ultimately, FAA plans to track the qualification and use of Level 1 through 5 FTD's in the Flight Standards Automation System (FSAS).

NOTE: Flight Standards District Office inspectors should be aware that a new or modified FTD qualified and approved in Levels 1 through 5, for which the information listed above has not been recorded by AFS-800, is not authorized for use under existing federal regulations.

8. EXEMPTIONS.

A. *Exemptions.* The FAA has issued exemptions from numerous sections of part 61 to permit the exemption holder to complete various flight training and testing requirements in an FAA-approved flight simulator, subject to specified conditions and limitations. For example, the pilot taking a proficiency check must have completed three landings within the past 90 days, in the particular type aircraft for which the proficiency check is required, if the simulator is not approved for the landing maneuver.

B. *Inspector Familiarity with Exemptions.* Each FSDO will take necessary action to ensure that the simulator approval criteria outlined in AC 120-40 is followed closely. Inspectors should be familiar with exemptions issued to ensure that trainees receive the required training from the exemption holder and the conditions and limitations of the exemptions are strictly observed.

SECTION 4. OPERATIONS BULLETINS

1. GENERAL. This section includes information that is not task-specific, but is of importance to inspectors performing Title 14 of the Code of Federal Regulations (14 CFR) part 91 related tasks such as inspections and other contacts with airmen and operators.

2. HAZARDS ASSOCIATED WITH IMPROPER SECURITY OF NOSE SECTION EXTERIOR CARGO DOORS. Investigation of a fatal accident revealed that the nose baggage door of a twin-engine aircraft opened in flight shortly after takeoff. Eight people died in the ensuing accident. Further investigation revealed that the safety interlock feature on the nose baggage door had been bypassed sometime before the accident. Therefore, the pilot received no warning that the door was unlocked.

A. Continued Occurrences. The continued occurrence of unwanted nose baggage door openings on small twin-engine aircraft indicates a safety problem still exists with small aircraft that use the nose section as a baggage area.

(1) The nose baggage doors of these aircraft may have door warning lights located in the cockpit. The warning lights illuminate to indicate an open or unsecured baggage door.

(2) Some models have a safety interlock feature that is designed to prevent an engine start if the nose baggage compartment door is not properly latched.

(3) The warning light system and the safety interlock may become inoperative or may intentionally be bypassed. When the pilot is not warned of an open or improperly latched nose baggage door, door opening and release of cargo can occur with catastrophic results.

B. FAA Responsibility. In all contacts with operators of twin-engine aircraft with nose section cargo storage areas, inspectors should inform operators and pilots of the hazards associated with improper security of nose section exterior cargo doors.

(1) Inspectors should suggest that the operators establish and use a procedure to ensure the security of all exterior cargo doors before flight. The inspector

should also recommend installation of secondary locking devices or cargo restraint systems.

(2) During inspection of this type of aircraft, an airworthiness inspector should determine if an installed safety interlock feature is functioning properly or if it has been bypassed. Malfunctioning warning or safety interlock systems should be properly repaired before flight.

3. AIR TRAFFIC CONTROL (ATC) CLEARANCE READ BACK. Over the past several years, accidents and incidents have occurred as a result of misunderstandings between pilots and controllers. As a result of National Transportation Safety Board (NTSB) investigations and recommendations, the Air Traffic Control Handbook has been amended to require a read back of any altitude assignment or a vectoring heading assignment.

A. Adherence to Communications Procedures. In all contacts with pilots, instructors, examiners, and pilot schools, inspectors should emphasize the need for strict adherence to communications procedural requirements.

B. ATC Read Backs. During contact with pilots, inspectors should stress the possible hazards associated with pilot and controller misunderstandings. Clear read back of ATC altitude or heading clearances helps to avoid such misunderstandings.

4. PASSENGER EMERGENCY BRIEFINGS.

After the crash of a corporate jet, the passengers had difficulty evacuating the airplane because of insufficient knowledge of emergency procedures. The passengers had not been briefed as required by 14 CFR part 91, § 91.519. Furthermore, the placarded instructions for opening the main cabin door or the overhead emergency exits were not posted as required by 14 CFR § 25.811. In addition, a small carpet became wedged underneath the door separating the passenger cabin from the main entrance area, adding to the problems in evacuating the aircraft.

A. Responsibilities of Corporate Operators. Operators of corporate aircraft should:

(1) ensure that passengers are briefed on emergency procedures before takeoff;

(2) ensure compliance with placard requirements;

(3) ensure that procedures to stow all loose items in the aircraft before takeoff and landing are in effect; and

(4) periodically review the accuracy and appropriateness of the passenger briefing cards.

B. FAA Responsibilities. During surveillance or other contact with corporate aircraft operators, inspectors must stress the importance of briefing passengers on emergency procedures before flight.

5. USE OF MANUFACTURER CHECKLISTS.

Investigation of an accident involving a jet aircraft operated under 14 CFR part 91, Subpart D revealed that the flight crewmembers failed to check the emergency/park brake handle position before takeoff.

A. Takeoff Crash. In this accident, an aircraft crashed when the pilot was unable to rotate the aircraft to the proper pitch attitude during an attempted takeoff. Examination of the emergency/park brake lever indicated that the lever was in the "park" position during the takeoff roll.

B. Manufacturer Checklists. Comparison of the manufacturer's suggested checklist with the company's checklist indicated that the manufacturer's suggested checklist recommended that the status of the emergency/park brake and associated warning light be checked on three separate occasions before takeoff. None of these checks appeared on the company checklist.

C. FAA Responsibilities. Aviation safety inspectors must review the checklists of high performance jet aircraft to ensure that any information or procedures in the manufacturer's suggested checklist are included in the checklist used by the flightcrew.

6. ALTERNATE AIRPORTS FOR HIGH ALTITUDE IFR OPERATIONS.

A. Airports Where Minimum Descent Altitudes (MDA's) Place the Aircraft Higher than 2,000 Feet Above Ground Level (AGL). There are several high altitude airports in the U.S. with approved Instrument Approach Procedures (IAP) where the MDA is greater than 2,000 feet and/or the landing visibility minimums are greater than 3 miles. This could

result in a critical situation if the weather is marginal and a pilot has failed to plan for a suitable alternate airport.

B. Title 14 CFR § 91.167(b). Title 14 CFR § 91.167(b) allows a pilot not to satisfy the fuel requirement to reach an alternate airport provided the ceiling at the estimated time of arrival (ETA) over the airport of intended landing is forecast, for at least 1 hour before and after landing, to be at least 2,000 feet above the airport elevation and the visibility is at least 3 miles.

C. FAA Responsibilities. During surveillance or other contacts with pilot groups, especially in high altitude areas, inspectors should stress the need for a careful review of the instrument approaches to airports located in mountainous terrain with respect to minimum altitudes and aircraft avionics equipment capability. Inspectors should recommend that pilots consider the need for enough fuel to divert to an alternate airport even when the weather forecasts are at or above the minimums for waiving this requirement.

(1) A number of airports have minimum altitudes below 2,000 feet and 3 miles for some IAP's that require special equipment such as a glide slope or Distance Measuring Equipment (DME). All other IAP's at these airports have MDA's above the required minimum ceiling for foregoing the necessary fuel to reach an alternate. If the special equipment is not installed or becomes inoperative, and the ceiling is as forecast, about 2,000 feet AGL, the pilot might be forced to declare an emergency under instrument conditions at the destination airport.

(2) A number of airports have MDA's that are slightly (100 to 200 feet) below 2,000 feet AGL. In situations when the weather is forecast to be 2,000 feet ceiling and/or 3 miles visibility, a pilot may find, upon arrival, that the weather is somewhat less than forecast. If a missed approach was necessary and the prospects of the weather improving were slim, the pilot who had not prudently included enough fuel to get to a suitable alternate might become involved in an emergency situation.

7. HAZARDS ASSOCIATED WITH CARRIAGE OF CARGO PACKED IN CARBON DIOXIDE.

An incident involved flight crewmembers of a Falcon Jet who experienced dizziness and shortness of breath while awaiting takeoff clearance. The cargo on board the aircraft included items packed in solid carbon dioxide (CO₂), also known as dry ice. The crew was

CHAPTER 48. ISSUE A CERTIFICATE OF WAIVER OR AUTHORIZATION FOR AN AEROBATIC PRACTICE AREA OR AN AEROBATIC CONTEST BOX

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE:

- Aerobic Practice Areas: 1232
- Aerobic Contest Box: 1233

2. OBJECTIVE. The objective of this task is to evaluate Federal Aviation Administration (FAA) Form 7711-2, Certificate of Waiver or Authorization Application (figure 48-1), and issue an FAA Form 7711-1, Certificate of Waiver or Authorization (figure 48-2), for the purpose of establishing an aerobic practice area and/or an aerobic competition box. Completion of the task results in the approval or disapproval of the applicant's FAA Form 7711-2. If approval is granted, FAA Form 7711-1 with attached special provisions is issued to the applicant.

NOTE: As per volume 1, chapter 1, section 2, page 1-7, paragraph 3 of this handbook, no regional supplements to aviation event policy are permitted.

3. GENERAL. In this chapter, waiver preparation for an aerobic practice area and an aerobic contest box will be discussed separately in both sections 1 and 2.

A. Background. Section 1 expands on the background for evaluating an application and issuing a waiver for both types of waived airspace, including the requirements of the application process, the issuance of the waiver, and the surveillance of the activity. Background and special provisions unique to each activity are found in paragraphs 4 and 5 following.

(1) A separate set of suggested special provisions that may be used for each type of waived airspace is included.

(2) Section 1 also outlines the requirements necessary to establish and use either an aerobic practice area or an aerobic contest box.

(3) Waivers are issued for two specific activities in these two airspace areas.

(a) An aerobic practice area is established for the purpose of practicing aerobic skills.

(b) The aerobic contest box is established for the sole purpose of conducting competitive aerobic demonstrations in accordance with the rules, procedures, and practices of the International Aerobic Club.

(4) The user of an aerobic practice area or an aerobic contest box is not required to hold an FAA Form 8710-7, Statement of Acrobatic Competency.

(5) Each activity may require a waiver with attendant special provisions appropriate to the site and the activity.

B. Procedures. Section 2 contains specific procedures for the processing and issuance of waivers for each type of waived airspace.

C. Regulatory Authority. The regulatory authority for the issuance of waivers of Title 14 of the Code of Federal Regulations (14 CFR) part 91 for aerobic practice areas and aerobic contest boxes is based on the authority vested in the Department of Transportation (DOT) by Title 49 of the United States Code (49 U.S.C.). The regulations contained in 14 CFR part 91 are actually the responsibility of air traffic control (ATC). However, certain portions of these regulations have been delegated to the Flight Standards Service for oversight and enforcement in accordance with FAA Order 7210.3, Facility Operation and Administration, part 6, chapter 18, paragraph 18-1-3 (current edition). Even though the mandate to designate and supervise operations within waived airspace is within Flight Standard's purview, all airspace waivers are fully coordinated with Air Traffic to ensure safety of flight in the National Airspace System (NAS). Requests for waivers and authorizations are processed by the Flight Standards District Office (FSDO). The final approval of the waiver or authorization is the responsibility of the FSDO manager who has jurisdiction over the geographic area in which the terms of the waiver or authorization are to be exercised.

D. Operation of Transponders. Transponders must be installed, operational, and used in the appropriate airspace, as required by 14 CFR part 91, § 91.215. The use of a transponder and its altitude reporting capability facilitates better ATC service and aircraft separation, thereby increasing the safety between waived and non-waived, nonparticipating aircraft operating in the NAS. ATC may authorize a deviation from these requirements on the basis of the provisions of 14 CFR § 91.215.

E. Application and Approval. Applications for a Certificate of Waiver or Authorization are processed, approved, and issued by the FSDO.

(1) *Form Used.* FAA Form 7711-2 is used by the applicant for a Certificate of Waiver or Authorization. All Items on the form may not apply, and, in some cases, additional information may be required (figure 48-1).

(2) *Authority to Sign.* The FSDO manager or a delegated representative (i.e., "acting manager") shall sign a waiver or authorization when the application is approved.

(3) *Assisting Applicants with Waiver of Authorization Applications.* Thorough planning has a direct bearing on the success and safety of any aerobatic practice area. The applicant should be encouraged to develop an effective plan that will cover all facets of the coordination and use of the practice area or contest box. The inspector should assist the applicant by discussing the following subjects:

(a) The proper site selection, (controlled and uncontrolled airports, or other sites suitable for aerobatics).

(b) The size, scope, and environmental impact of the proposed area. For environmental procedures coordinate with the regional Flight Standards division. (See appendix 4, paragraph 3c, of FAA Order 1050.1D, Policies and Procedures for Considering Environmental Impacts.)

(c) The number and status of other users of the practice area.

(d) A plan for spectator control, if appropriate.

(e) The preparation of Notices to Airmen (NOTAM).

(4) *Review of FAA Form 7711-2.* Upon receipt, FAA Form 7711-2 should be reviewed for obvious discrepancies. If discrepancies exist, a meeting with the applicant is helpful in resolving them to mutual

satisfaction. The information submitted by the applicant on the FAA Form 7711-2 MUST NOT be altered by the issuing office.

4. AEROBATIC PRACTICE AREAS. Aerobatic competition pilots, airshow pilots, and others who wish to practice aerobatic maneuvers not necessary for normal flight and below an altitude of 1,500 feet above ground level (AGL) must use a waived aerobatic practice area. These areas are not to be considered airshow sites. The aviation community uses these practice areas to establish and maintain proficiency as well as enhance competitive skills in all the recognized aerobatic maneuvers. They are established by the waiver applicant in conjunction with the local FSDO and may have dimensions of several miles in various directions or be as small as a contest box; i.e., a cubic box with a dimension of 3,300 feet on all sides. Inspectors should be receptive to the establishment of these areas, consistent with safety and the efficient use of the NAS. It is imperative that the safety of all nonparticipating aircraft be considered when issuing a Certificate of Waiver or Authorization for an aerobatic practice area.

A. Waivers. When a waiver is issued for an aerobatic practice area, it generally includes provisions for aerobatic flight below 1,500 feet AGL.

(1) Other portions of 14 CFR § 91.303 may be waived if the proposed operation involves a Federal airway or Class B, C, D, or E airspace designated for an airport.

(2) Proponents of proposed aerobatic practice areas located directly over or in the immediate vicinity of an airport should coordinate the planned activity with airport management. This is in keeping with the "good neighbor" policy and provides a means for addressing potential aviation safety concerns. The issuing FSDO will review, verify, and evaluate any potential safety concerns and modify the special provisions attached to the Certificate of Waiver accordingly to address these concerns.

(3) When an aerobatic practice area is located in the vicinity of a populated area, the waiver applicant may wish to coordinate with the landowners and residents if aerobatic flight is planned to be conducted directly over or near their property. This is in keeping with the "good neighbor" policy and assists in reducing noise and livestock damage complaints.

(4) Those waivers requested for areas which are designated as environmentally sensitive, as defined in advisory circular (AC) 91-36, VFR Flight Near

Noise-Sensitive Areas (current edition) must be coordinated with the appropriate Federal and/or state agency.

B. Definitions.

(1) *Aerobatic Flight.* The provisions of 14 CFR § 91.303 constitute the definition of aerobatic flight.

(2) *Inspector-in-Charge (IIC).* The aviation safety inspector (operations) who is assigned the responsibility of issuing the waiver and conducting the ongoing surveillance of the aerobatic practice area.

(3) *Responsible Person(s).* The person(s) named in block 2 on the FAA Form 7711-2 and noted in the "Issued To" block of FAA Form 7711-1.

C. Scope of Waivers. Waivers of the 14 CFR and the attendant special provisions to those waivers may vary in scope, depending on the regulations that an applicant requests to be waived.

(1) Some aerobatic maneuvers may require only a waiver of 14 CFR § 91.303(e) to permit aerobatic flight at less than 1,500 feet above the surface. Others may require the waiver of speed limitations, minimum safe altitudes, operations in controlled airspace, or specific prohibitions while operating in the vicinity of an airport.

(2) The following approved sections of the 14 CFR part 91 may be waived: §§ 91.117, 91.119, 91.127, 91.129, 91.130, 91.131, and 91.303, depending on the location, congestion, and complexity of the area in which aerobatics will take place.

(3) Waivers of the basic visual flight rules (VFR) weather minimums specified in 14 CFR § 91.155 may be considered only in areas where the entire aerobatic maneuvering sequence can be provided separation from participating and nonparticipating aircraft by ATC.

D. Regulations that May Not Be Waived.

(1) Title 14 CFR § 91.119(a) and (b) may not be waived at any time for an aerobatic practice area.

(2) Title 14 CFR § 91.151 may not be waived for any operations conducted in an aerobatic practice area. However, the International Aerobatic Club (IAC) holds an exemption for fuel required during flight in VFR conditions. This exemption applies only during the conduct of an officially sanctioned aerobatic contest.

(3) Title 14 CFR § 91.307 may not be waived at any time for pilots flying in the aerobatic practice

area. Specific authority exists in the 14 CFR to allow certain operations without the use of a parachute.

E. Air Traffic Coordination. Aerobatic practice areas may be located at controlled or uncontrolled airports or in sparsely populated areas far removed from any persons and/or congested areas. The location of these practice areas is determined through proper coordination with the waiver applicant and appropriate ATC and FSDO personnel. Use of the area may be for a short duration, once each year for annual qualification, or for all hours of the day and/or evening. Inspectors should contact the ATC facility having primary airspace jurisdiction over the proposed practice area. Where an ATC hub facility exists, one call can be made to the airspace and procedures specialist to facilitate expeditious coordination action. In other areas, inspectors may need to contact the air route traffic control center (ARTCC) which exercises control over the affected airspace. In all cases, the waiver shall not be signed unless the working file contains documentation of ATC coordination.

F. Night Operations. Aerobatic performers who conduct night airshow operations must practice their routines in realistic conditions before the actual flight at an aviation event. Numerous air show performers of both powered and unpowered aircraft need to practice their routines in areas that offer no obstructions and little or no distractions during the hours of darkness.

(1) In order to facilitate their practice sessions, inspectors should determine if aerobatic practice areas previously approved for daylight operations only are acceptable for night operations as well.

(2) Many performers of night aerobatic maneuvers use some type of flares or pyrotechnic devices to highlight their maneuvers. Other performers use only lights and strobes for their acts. In either case, it will be necessary to coordinate and approve all facets of the waiver and any special provisions to ensure safety is not compromised if the operation is conducted at night.

G. Temporary Aerobatic Practice Areas. During the airshow season, the FSDO may be called upon to issue a waiver for the establishment of a temporary aerobatic practice area. These waivers may be offered to the sponsor of a proposed airshow at the same time the application for the airshow waiver is submitted. This additional waiver may be prepared for the specific purpose of providing a temporary area in which only airshow performers may practice their routines before and during the airshow. In addition, it will provide a safe and approved area for those performers who may be from other states or countries

and who need to adapt to the weather and altitude conditions intrinsic to the local area. Even though this will be a separate waiver which becomes effective two or three days before the airshow, it must be prepared so as to terminate on the same date and time as the airshow waiver.

(1) Some of the parameters to consider in establishing this temporary practice area are as follows:

(a) The actual airshow site may be suitable as a temporary practice area if it is a controlled environment and there will be no conflict with other nonparticipating aircraft. Effective times must be thoroughly coordinated with the pertinent air traffic facilities before approval and issuance of the waiver.

(b) The temporary practice area should be established no more than 20 or 30 miles from the actual airshow site.

(c) All coordination required for the establishment of a (regular) aerobatic practice area should also be accomplished for preparation of a temporary aerobatic practice area.

(d) The sponsor must control access to the temporary aerobatic practice area, and only those persons performing in the airshow should be permitted to use the area.

(e) The physical parameters of the temporary practice area should be large enough to encompass all of the maneuvers that will be performed in the actual airshow.

(f) The responsibility for site selection, coordination, approvals, application, and oversight of the temporary aerobatic practice area rests solely with the event sponsor/applicant.

(2) The International Council of Air Shows (ICAS) will maintain a current listing, prepared by the ICAS staff, that delineates established waived aerobatic practice areas which may be used for performer practice with the concurrence of the waiver holder. It is the responsibility of the airshow sponsor to coordinate the use of these established practice areas. If no site is available, it is incumbent upon the airshow sponsor to request a temporary aerobatic practice area, or the inspector preparing the airshow waiver may wish to suggest that one be established.

H. Standard Special Provisions. The following are samples of standard special provisions that may be used when issuing a certificate of waiver for an aerobatic practice area. Material in brackets [] indicate

where the applicant must insert information specific to the waiver being sought.

(1) Aerobatic flight shall be confined to the area designated on the pictorial chart attached to this certificate of waiver and defined in special provision (2). A definitive pictorial chart or photograph of the underlying area should be attached to the application and the final, approved waiver.

(2) The aerobatic practice area is further defined as follows: [This item should contain a literal description of the entire practice area, including all delineating boundaries and the altitudes for each specific section of the practice area.]

(3) No aerobatic maneuvers may be performed over any open air assembly of persons or congested area of any city, town, or settlement.

(4) No person may operate an aircraft in aerobatic flight when the visibility is less than [number] miles or a ceiling less than [number] feet.

(5) Before commencing aerobatic flight operations, the person(s) authorized to activate and deactivate the aerobatic practice area shall be responsible for advising the [name of flight service station (FSS) and telephone number] of the activity and requesting that a NOTAM that includes the following information be issued:

(a) The location, dates, and times the aerobatic activity will be in effect.

(b) If appropriate, the runway(s) that will be closed during the aerobatic activities.

(6) All certificates of waiver granting relief from appropriate sections of 14 CFR part 91 must also contain guidance stipulating that the person(s) responsible for activation of the aerobatic practice area provide the controlling FSS with a copy of the certificate of waiver at least 48 hours before activation of the NOTAM. For certificates of waiver that are issued on a long term basis, additional wording should be included advising the holder to ensure that the FSS keeps the waiver on file for future NOTAM activation.

(7) Notification shall be made to the [name of air traffic facility or FSS and telephone number] at least 30 minutes before the commencement of aerobatic activity in the practice area, or, if a letter of agreement exists, notification shall be made as specified in that document. The [name of facility] shall also be notified at the termination of aerobatic activities.

(8) The person(s) authorized to activate and deactivate the aerobatic practice area described in

special provision (2) is [name of the person(s) to whom the waiver is issued or the person(s) delegated by the waiver holder].

(9) The person named in special provision (8) shall also be responsible for the following:

(a) Ensuring that all pilots and aircraft operating within the confines of the waived aerobatic practice area are properly certificated.

(b) Briefing each pilot to ensure that all users of the practice area comply with the limitations imposed by the certificate of waiver and its attendant special provisions.

(c) Maintaining a log containing the pilot's name, airman certificate number, aircraft registration number, date, and time the aerobatic practice was in use and providing this information to the FAA upon request.

(10) When required by ATC, all pilots must monitor [name of ATC facility and frequency assigned] on a continuous basis while operating within the aerobatic practice area.

(11) All pilots operating within the waived aerobatic practice area shall maintain VFR at all times and shall be responsible for seeing and avoiding all conflicting traffic.

(12) Aerobatic flight shall be conducted only between the hours of [specific times of use].

(13) The holder of this certificate of waiver or delegated representative is responsible for halting or canceling activity in the aerobatic practice area if, at any time, the safety of persons or property on the ground or in the air is in jeopardy, or if there is a failure to comply with the terms or conditions of this waiver.

(14) The FAA has the authority to cancel the certificate of waiver or delay any activities if the safety of persons or property on the ground or in the air is in jeopardy, or if there is a violation of the terms of the waiver or authorization.

5. AEROBATIC CONTEST BOXES. A general overview of the aerobatic contest box is contained in figure 48-3 and depicts the dimensions of the area for powered aircraft engaged in competitive aerobatics. figure 48-4 depicts the dimensions of the area for non-powered aircraft engaged in competitive aerobatics.

A. Definitions.

(1) *IIC.* The aviation safety inspector (operations) who is assigned the responsibility of issuing the waiver and monitoring the aerobatic contest box, as deemed necessary by the FSDO manager, to determine compliance with the applicable 14 CFR.

(2) *Contest Director.* At an aerobatic contest, the person who acts as the general manager of the overall event and is responsible for all SAFETY related issues. The contest director may delegate specific duties, functions, and authority but must retain complete accountability for the safety of the event. The contest director may also be the person who is designated by the FAA to monitor the event. The contest director ensures that all participants comply with all rules set forth in the IAC rules book as well as the provisions of the certificate of waiver.

(3) *Chief Judge.* At an aerobatic contest, the person assigned as the primary judge of one or more categories of competition. The chief judge does not actually judge the competitors, but helps to ensure the safety of competitors within the contest box. The chief judge is assisted by numerous other persons located on the ground and/or in the immediate vicinity of the contest box.

(4) *Safety Director.* The person who reports directly to the contest director and is responsible for flight and ground safety.

(5) *Chief Technical Monitor.* A person assigned duties by the contest director, who will perform a technical inspection of each competing aircraft and its equipment. The chief technical monitor should hold an airframe and powerplant certificate; however, this position may be filled by the contest director with the "best qualified" person available.

(6) *Aerobatic Contest Box.* A block of airspace 3,300 feet long, 3,300 feet wide, and having an upper limit of 3,500 feet AGL (4,000 AGL for gliders). The lower limit of the contest box is 1,500 feet for Basic and Sportsman Categories, 1,200 feet for Intermediate, 800 feet for Advanced, and 328 feet for the Unlimited Category. For gliders, the lower limit of the box is 1,500 feet for the Sportsman Category, 1,200 feet for the Intermediate Category, and 600 feet for the Unlimited Category. (See figures 48-3 and 48-4.)

(7) *Participant.* Any individual and/or pilot specifically involved with, or participating in, the waived aerobatic activities.

(8) *Nonparticipant.* Any individual and/or pilot not specifically involved with, or participating in, the waived aerobatic activities.

(9) *Competition Categories.* The five different competition categories, as defined by IAC official contest rules, currently designated for powered aircraft aerobatics. Each category has a different set of aerobatic sequences. In addition, there are currently three competition categories for gliders, each category having its own specialized set of aerobatic sequences.

(a) *Powered Aircraft.*

(i) *Basic Category.* Aircraft in this category operate from an altitude of 1,500 to 3,500 feet AGL.

(ii) *Sportsman Category.* Aircraft in this category operate from an altitude of 1,500 to 3,500 feet AGL.

(iii) *Intermediate Category.* Aircraft in this category operate from an altitude of 1,200 to 3,500 feet AGL.

(iv) *Advanced Category.* Aircraft in this category operate from an altitude of 800 to 3,500 feet AGL.

(v) *Unlimited Category.* Aircraft in this category operate from an altitude of 328 to 3,280 feet AGL.

(b) *Gliders.*

(i) *Sportsman Category.* Aircraft in this category operate from an altitude of 1,500 to 4,000 feet AGL.

(ii) *Intermediate Category.* Aircraft in this category operate from an altitude of 1,200 to 4,000 feet AGL.

(iii) *Unlimited Category.* Aircraft in this category operate from an altitude of 600 to 4,000 feet AGL.

B. Scope of Waivers. The following regulations MAY NOT be waived:

(1) Title 14 CFR § 91.119(a) and (b) may not be waived at any time for an aerobatic contest box.

(2) Title 14 CFR § 91.151 may not be waived for operations conducted in an aerobatic contest box; however, the IAC holds an exemption for minimum fuel required during flight in VFR conditions. This

exemption applies only during the conduct of an officially sanctioned aerobatic contest.

(3) Title 14 CFR § 91.307 may not be waived at any time for pilots flying in the aerobatic contest box. Specific authority exists in the 14 CFR to allow certain operations without the use of a parachute.

C. Air Traffic Coordination. An aerobatic contest box may be located at a controlled or uncontrolled airport. The location is determined and approved through proper coordination with the waiver applicant, airport management, FSDO inspectors, and appropriate ATC personnel. Inspectors should contact the ATC facility having primary airspace jurisdiction over the proposed aerobatic contest box. Where a hub facility exists, one call can be made to the airspace and procedures specialist to facilitate expeditious coordination action. In other areas, inspectors will need to contact the ARTCC which exercises control over the affected airspace. In all cases, the waiver SHALL NOT be signed unless the working file contains documentation of ATC coordination.

D. Standard Special Provisions. The following special provisions are listed below to provide a sample of standard provisions that may be used when issuing a waiver for an aerobatic contest box. Material in brackets [] indicate where the applicant must insert information specific to the waiver being sought.

(1) The aerobatic competition area that these special provisions pertain to is depicted and described on attachment [attachment number] to this certificate of waiver.

(2) This waiver is not valid if the in-flight visibility is less than 3 statute miles or the ceiling, if a ceiling exists, is less than 3,000 feet AGL for standard sequences or 2500 feet AGL for alternate flat sequences. Flight operations shall be conducted IAW 14 CFR § 91.155.

(3) The contest director is responsible for ensuring that [ATC facility] is notified by telephone [ATC primary telephone number] or [ATC backup telephone number] at least 30 minutes before operations begin and again when the flight activity has been terminated.

(4) Before commencing aerobatic flight operations, the contest director is responsible for advising the [name of FSS and telephone number] of the activity and for requesting that a NOTAM that will

ensure wide dissemination and include the following information, appropriate to the operation, be issued:

(a) The location, dates, and times the aerobatic activity will be in effect.

(b) When appropriate, runway(s) that will be closed during the aerobatic activities. [This information must also be included in the traffic advisory to non-participating aircraft.]

(c) No touch and go landings are permitted during the times the NOTAM is in effect. [This information must also be included in the traffic advisory to non-participating aircraft.]

(d) All traffic at [name of airport] will use [specific traffic pattern information] when landing on or taking off from [list runway(s)] while the NOTAM is in effect. [This information must also be included in the traffic advisory.]

(5) All certificates of waiver granting relief from appropriate sections of 14 CFR part 91 must also contain guidance stipulating that the person(s) responsible for activation of the aerobatic contest box provide the controlling FSS with a copy of the certificate of waiver at least 48 hours before activation of the NOTAM.

(6) The segmented circle, when installed, will prominently depict the change of traffic pattern during all aerobatic activity. [This information must also be included in the traffic advisory to non-participating aircraft.]

(7) Aerobatics shall only be conducted between the hours of official sunrise and sunset.

(8) Each aircraft operating within the aerobatic contest box must be appropriately equipped to maintain continuous radio reception with the chief judge.

(9) The holder of the waiver must obtain the permission of the [name of airport] manager to conduct aerobatic activities and, in addition, ensure that the airport management fully understands and will abide by the terms and conditions of the certificate of waiver.

(10) Aerobatics are limited to those aircraft and pilots who are approved by the holder of the certificate of waiver or a designated representative. The contest director is responsible for ensuring that:

(a) Each aircraft competing in the aerobatic competition has the appropriate documents necessary to show current registration and airworthiness;

(b) Each pilot participating in the aerobatic competition is properly certificated and possesses the currency and/or endorsements appropriate to the flight operation being conducted; and

(c) Before any waived aerobatic operation, each pilot participating in the aerobatic competition receives a briefing from the waiver holder or designated representative. This briefing must include the terms of the waiver, the confines of waived airspace, and any special limitations or procedural considerations contained therein (figure 48-5).

NOTE: See paragraph 5A(2) above regarding delegation of authority by the contest director.

(11) A crowd line consisting of a physical barrier and/or adequate policing shall be established at least 500 feet from the aerobatic box to confine all spectators within a designated area.

(12) When operating within waived airspace, 14 CFR § 91.119(c) is waived only if unoccupied structures are involved or to allow participating waived aircraft to operate closer than 500 feet to participating personnel, vehicles, or vessels on the ground. All participating aircraft must maintain at least 500 feet from persons not participating in the aviation event.

(13) Before performing any aerobatic sequence, the area must be scanned thoroughly by both the competitor and the chief judge. The competitor must not enter and/or initiate any aerobatic maneuvers unless the chief judge has ensured that the area is free of any conflicting traffic and has advised the pilot that the aerobatic contest box is clear.

(14) The FAA has the authority to cancel the certificate of waiver or delay any events if the safety of persons or property on the ground or in the air is in jeopardy, or if there is a violation of the terms of the waiver or authorization.

E. Additional Special Provisions. The following special provisions are issued to a waiver holder for an aerobatic contest box established at an uncontrolled airport where a runway(s) remains open during competition. These provisions do not have to be copied verbatim and any portion may be edited to fit a unique or individual need. The provisions should be used as appropriate to the type of scenario encountered.

(1) [Name of airport] will be closed to all traffic when the competitive activity of Advanced and Unlimited Category pilots may create a conflict with continuing nonparticipant flight operations. [Also

include this information in the NOTAM and traffic advisory, as required.]

(2) No touch and go landings are permitted. [Also include this information in the NOTAM and traffic advisory.]

(3) Aerobatic operations must not be conducted at altitudes lower than 1,200 feet AGL when the aerobatic contest box is located over a runway that is OPEN and that activity may create a conflict with continuing nonparticipant flight operations.

(4) The contest director, or a person specifically designated by the contest director, will continuously monitor the unicom frequency while the aerobatic box is active. That person will advise any aircraft operating at or near [name of airport] of potential traffic conflicts which may occur while operating in close proximity to the aerobatics box. The person assigned to monitor the unicom frequency will have direct access to the chief judge by radio, telephone, or direct contact. Should there be an actual or potential conflict, the chief judge has the final authority to call for a cessation of aerobatics.

(5) The unicom shall be manned by a person who has been briefed on the aerobatics activity, special pattern rules, and restrictions. If needed, a scripted version of the advisory will be furnished by the waiver holder in order to provide a standardized advisory to all pilots.

NOTE: An aerobatic contest box located at an airport does not have to occupy 5 miles of waived airspace. A contest box may need only a 180 degree quadrant on the West side of an airport within 1 mile. At other locations, there may be a contest box located over the airport and an aerobatic practice area 4 miles

north of the airport, both being used at the same time. The top of the box or area should not unnecessarily waste airspace for the user or ATC. There may be ATC concessions made when an aircraft is transponder and radio equipped because the aircraft can be readily identified for air traffic purposes. Conversely, at some locations, the input from ATC may reveal that the box or area is directly in the way of radar vector arrival or departure routes, in which case a disapproval may be warranted.

F. Aerobatic Competition that is not Sanctioned by the IAC. The following special provision will be issued to a waiver holder conducting an aerobatic competition that is not sanctioned by the IAC, excluding competitive flying displays at airshows conducted in accordance with a Certificate of Waiver issued under the provisions of chapter 49.

(1) Participants will have in their possession, a valid IAC computer generated score sheet or other document acceptable to the FAA from a aerobatic competition sanctioned by the IAC and completed within the last 24 calendar months indicating that he/she has successfully competed in the specific competition category he/she intends to compete in, at this event.

(2) Except for takeoff and landing, all participants will fly no lower than the minimum altitude prescribed for this specific competition category as stated in the IAC official contest rules.

NOTE: The minimum altitudes for each competition category are also defined in paragraph 5A(9).

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of Title 14 of the Code of Federal Regulations (14 CFR) parts 1, 61, 91, and Federal Aviation Administration (FAA) orders and policies. In addition, the person preparing and coordinating the waiver must be qualified as an aviation safety inspector (ASI) (operations).

B. Coordination. This task may require coordination with an air traffic control (ATC) facility, a local, state or Federal government agency, and the affected property owners with property underlying or adjacent to the practice area or aerobatic contest box, as appropriate.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, and 91
- FAA Order 7210.3, Facility Operation and Administration, part 6, chapter 18, paragraph 18-1-3 (current edition)
- FAA Order 1050.1, Policies and Procedures for Considering Environmental Impacts (current edition)
- Advisory Circular 91-36, VFR Flight Near Noise-Sensitive Areas (current edition)
- PTRS Procedures Manual (PPM)

B. Forms.

- FAA Form 7711-1, Certificate of Waiver or Authorization (figure 48-2)
- FAA Form 7711-2, Certificate of Waiver or Authorization Application (figure 48-1)
- FAA Form 8000-36, PTRS Transmittal Form

C. Job Aids.

- Sample figures

3. PROCEDURES.

A. Aerobatic Practice Area.

(1) Brief the applicant on the prerequisites of site selection and any coordination that may be appropriate to the area.

(2) Provide FAA Form 7711-2 to the applicant.

(3) Brief the applicant on the procedures for preparing and submitting the FAA Form 7711-2.

(4) Open a Program Tracking and Reporting Subsystem (PTRS) file.

(5) Upon receipt of a completed application—visit the proposed site, if required, to obtain first hand knowledge of the operational parameters of the airspace to be used and the underlying terrain. In addition, determine the environmental impact the proposed aerobatic activity might create and coordinate with the regional Flight Standards division, as appropriate.

(6) Before issuing the waiver, ensure that all proposals are coordinated with Air Traffic and any other entity directly affected by the establishment of the aerobatic practice area.

(7) If the application is approved, prepare FAA Form 7711-1 and the attendant special provisions.

(8) Submit FAA Form 7711-1 to the FSDO manager for signature.

(9) Prepare a file for the applicant that includes, but is not limited to, a copy of the following:

- (a) FAA Form 7711-1 and attendant special provisions;
- (b) FAA Form 7711-2;
- (c) letter of disapproval of the application, if applicable; and
- (d) documentation of ATC coordination.

(10) Send the applicant the originals of FAA Forms 7711-1 and 7711-2 and the attendant special provisions.

(11) Send a copy of both forms with all attachments to the regional office.

(12) Make appropriate PTRS entries.

(13) Prepare an office file with copies of all forms.

B. Aerobatic Contest Box.

(1) Brief the applicant on the prerequisites of site selection and any coordination that may be appropriate to the area.

(2) Provide FAA Form 7711-2 to the applicant.

(3) Brief the applicant on the procedures for preparing and submitting the FAA Form 7711-2.

(4) Open a PTRS file.

(5) Visit the proposed site, if required, to obtain first hand knowledge of the operational parameters of the airspace to be used and the underlying terrain. In addition, determine the environmental impact the proposed aerobatic activity might create and coordinate with the regional Flight Standards division, as appropriate.

(6) Before issuing the waiver, ensure that all proposals are coordinated with Air Traffic and any other entity directly affected by the establishment of the aerobatic contest box.

(7) If the application is approved, prepare FAA Form 7711-1 and the attendant special provisions.

(8) Submit FAA Form 7711-1 to the FSDO manager for signature.

(9) Prepare a file for the applicant that includes, but is not limited to, a copy of the following:

(a) FAA Form 7711-1 and attendant special provisions;

(b) FAA Form 7711-2;

(c) letter of disapproval of the application, if applicable; and

(d) documentation of ATC coordination.

(10) Send the applicant the originals of FAA Forms 7711-1 and 7711-2 and the special provisions.

(11) Send a copy of both forms with all attachments to the regional office.

(12) Make appropriate PTRS entries.

(13) Prepare an office file with copies of all forms.

(14) For aerobatic contest boxes, send a copy of both forms with all attachments to Airspace and Rules Division, ATA-400 at FAA headquarters in Washington DC.

4. TASK OUTCOMES. Completion of this task results in one of the following:

A. Issuance of a Certificate of Waiver or Authorization with attached special provisions.

B. Disapproval of an Application for a Certificate of Waiver or Authorization with the reasons for the disapproval noted on the reverse side of the form in the "Remarks" block.

5. FUTURE ACTIVITIES.

A. Surveillance of activities/events conducted in the aerobatic practice area or aerobatic contest box, especially events not sanctioned by IAC.

B. Possible cancellation of the certificate of waiver due to noncompliance with the terms and conditions of the waiver and/or action necessary to ensure future compliance.

C. Consideration of a future application for waiver of regulations pertaining to aerobatic maneuvers conducted in an aerobatic practice area and/or aerobatic contest box.

FIGURE 48-1
FAA FORM 7711-2, APPLICATION FOR A CERTIFICATE OF WAIVER OR
AUTHORIZATION

[illegible]

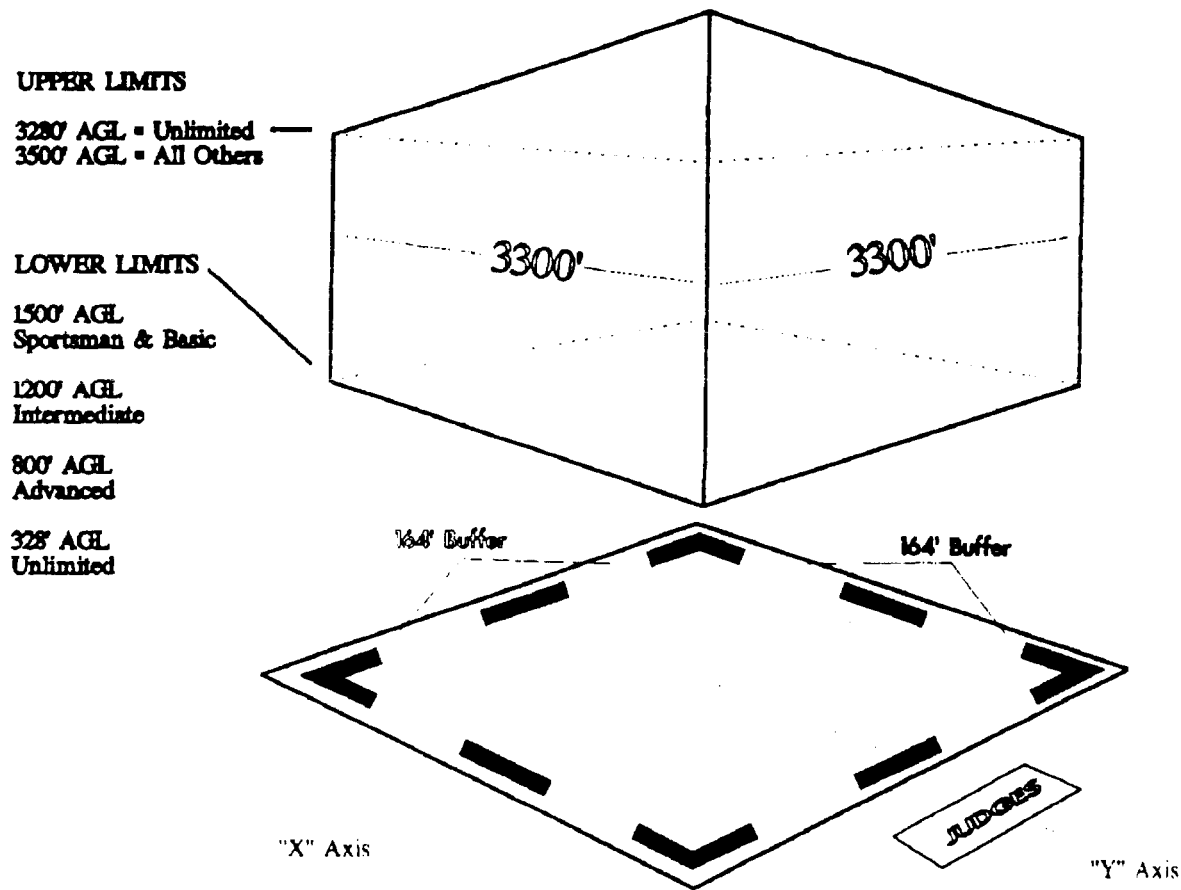
FIGURE 48-2
FAA FORM 7711-1, CERTIFICATE OF WAIVER OR AUTHORIZATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION	
CERTIFICATE OF WAIVER OR AUTHORIZATION	
ISSUED TO _____	
ADDRESS _____	
<p>This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.</p>	
OPERATIONS AUTHORIZED _____	
LIST OF WAIVED REGULATIONS BY SECTION AND TITLE _____	
STANDARD PROVISIONS	
1. A copy of the application made for this certificate shall be attached to and become a part hereof. 2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations. 3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein. 4. This certificate is nontransferable.	
Note.—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.	
SPECIAL PROVISIONS	
Special Provisions Nos. _____ to _____, inclusive, are set forth on the reverse side hereof.	
This certificate is effective from _____ to _____, inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.	
BY DIRECTION OF THE ADMINISTRATOR	
_____ (Region)	_____ (Signature)
_____ (Date)	_____ (Title)

FAA Form 7711-1 (7-74)

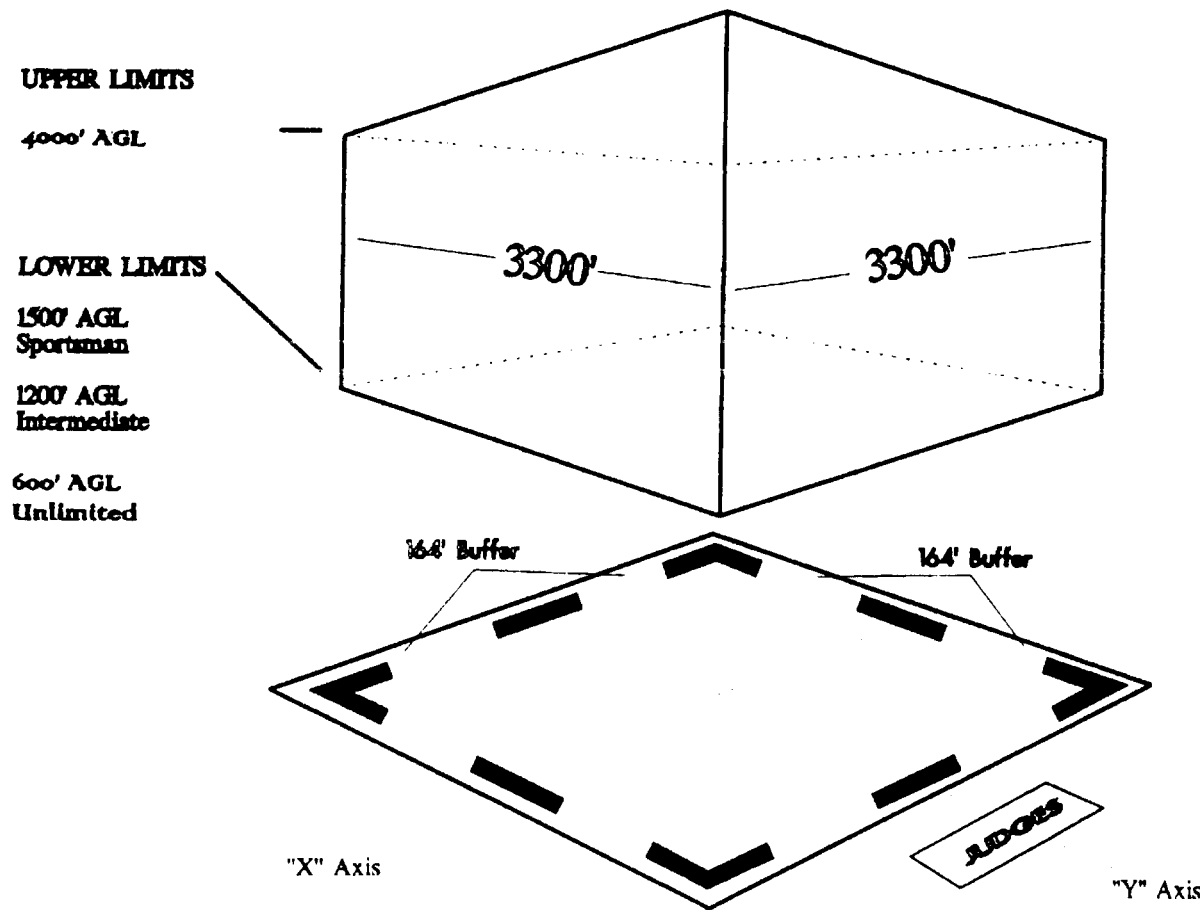
U. S. GPO: 1984 — 570-181/10199

FIGURE 48-3
AEROBATIC CONTEST BOX FOR AIRPLANES



AIRPLANES

FIGURE 48-4
AEROBATIC CONTEST BOX FOR GLIDERS



GLIDERS

FIGURE 48-5
SAMPLE BRIEFING SIGNATURE PAGE

I have read and/or been briefed on this document and fully understand the procedures, requirements, and limitations of the waiver and all of its special provisions.

1. CONTEST DIRECTOR: _____
2. CHIEF JUDGE: _____
3. SAFETY DIRECTOR: _____
4. UNICOM MONITOR: _____

PARTICIPANTS:

FULL NAME (PRINTED)	SIGNATURE	AIRCRAFT REGISTRATION

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CHAPTER 49. ISSUE A CERTIFICATE OF WAIVER OR AUTHORIZATION FOR AN AVIATION EVENT

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE.

- Issue Certificate of Authorization: 1220
- Issue Certificate of Waiver: 1230
- Complete DOD Form 2535: 1231

2. OBJECTIVE. The objective of this task is to determine whether to issue a Certificate of Waiver or Authorization, FAA Form 7711-1, to an applicant for an aviation event. Completion of this task results in the issuance of a Certificate of Waiver or Authorization or the disapproval of an Application for Certificate of Waiver or Authorization.

NOTE: As per volume 1, chapter 1, section 2, paragraph 3, no regional supplements to aviation event policy are permitted.

3. GENERAL.

A. Definitions. Many terms used in this chapter are not used elsewhere; therefore, their definitions are provided below.

(1) *Aerobatic Flight.* For airshow purposes when the event is conducted in accordance with a Certificate of Waiver or Authorization, the definition contained in Title 14 of the Code of Federal Regulations (14 CFR) part 91 § 91.303 does not apply. Therefore, the portion of § 91.303 that defines aerobatic flight must always be waived. The following guidelines apply in determining what maneuvers are considered aerobatic.

(a) An intentional maneuver in which the aircraft is in sustained inverted flight, or is rolled from upright to inverted or from inverted to upright is considered aerobatic flight.

(b) The following aircraft attitudes will be considered aerobatic flight:

i. For civil turbojet/turboprop powered (primary power unit) airplanes, when the pitch angle exceeds a positive or negative 60° angle from the horizon, and/or when the bank angle diverges from level flight in excess of 60°.

ii. For all other aircraft, when the pitch angle exceeds a positive or negative 90° angle from the horizon, and/or when the bank diverges from level flight in excess of 90°.

(c) All standard airshow aerobatic maneuvers such as slow rolls, snap rolls, loops, Immelmans, Cuban eights, spins, hammerhead turns, etc., are considered aerobatic flight and may not be performed over congested areas or over spectators, or between the spectator area and appropriate show line.

(d) Steeply banked (90° or less), level, climbing, or descending turns made at the end of the aerobatic area for the purposes of remaining in or returning to show center are not considered to be aerobatic flight.

(e) Positioning turns for high performance aircraft operated by the U.S. Air Force Thunderbirds, U.S. Navy Blue Angels, Canadian Defense Forces Snowbirds, and aircraft of other North American Military Units who possess an Federal Aviation Administration (FAA) accepted maneuver package regardless of the angle of bank or pitch attitude, are not considered to be airshow aerobatic maneuvers.

(f) Maneuvers such as steep turns in air racing are not considered aerobatic flight.

(2) *Formation Flying.* Formation flying is an aircraft maneuvering with reference to another aircraft or skydiver rather than the horizon, flight lines, etc. Air racing, simulated dogfighting, and multiple rotorcraft operations with more than 2 rotor disk separation are not formation flying.

(3) *Approved Maneuver.* An approved maneuver is a maneuver or a series of maneuvers that may include overflight of the designated spectator area(s) below 1,000 feet above ground level (AGL), or a maneuver that may involve energy directed at the spectator area. The U.S. Armed Forces aerial demonstration teams, the Blue Angels or Thunderbirds, and Canadian Defense Forces Snowbirds, present a maneuvers package approved by their respective military command to the General Aviation and Commercial Division, AFS-800, for acceptance each year. Civil and/or foreign military teams, flights, or individual acts must submit sufficient information about a single maneuver or series of maneu-

vers to AFS-800 for approval to conduct these types of maneuvers. Performers who do not conduct these types of maneuvers do not need a maneuvers package. This policy does not apply to closed course air racing.

(a) Aerobatic maneuvers having a descending recovery with a pull or push and having a flight path which, when extended, would contact the primary spectator area, will not be approved and cannot be performed by civil or foreign military performers at public aviation events.

(b) Maneuvers such as hammerhead turns, spins, inverted flat spins, or those maneuvers in which the aircraft is recovering from a tail slide, torque roll, lomcevak, or other similar maneuvers in which the aircraft, but not the energy vector, momentarily may be pointed in the direction of the primary spectator area do not need FAA approval. Also, basic, nonaerobatic (as defined above in paragraph 3A(1)(c)) positioning and/or clearing turns for the purposes of remaining in or returning to show center do not require FAA approval.

(c) Other maneuvers such as the switch blade, 360° turns with an aerobatic component or "outside" 360° turns, or a series of maneuvers that direct an energy vector toward the primary spectator area, and nonaerobatic flight over the primary spectator area at less than 1,000 feet AGL, must be approved by the National Airshow Coordinator in the General Aviation and Commercial Division in Washington headquarters. FAA approval for these maneuvers will be issued to a specific airshow performer and/or airshow performing team for specific maneuvers and for a specified duration not to exceed 24 calendar-months.

(4) *Authorization.* An authorization is an official document issued by the FAA to allow activities as provided by the regulations.

(5) *Aviation Event.* Aviation events include air shows, closed course air races, aerobatic contests, certain parachute demonstration jumps, and balloon meets and competitions. Most events are held at, or immediately adjacent to, an airport. An increasing number, however, are held offshore (within gliding distance of land), in the vicinity of a state fairground, or at other off-airport locations. Aerobatic school activities, use of aerobatic practice areas, or aerobatic meets will occur that are not air shows or races; however, a waiver must be issued. At these school activities or meets, which are not advertised as air shows, it may not be necessary to provide public airshow policing and emergency facilities. Participants at such events are not required to hold a Statement of Acrobatic Competency. (See volume 2, chapter 48.)

(6) *Critical Aircraft/Critical Wingman.* The critical aircraft or critical wingman is that aircraft closest to a spectator area.

(7) *Crowd Line.* A crowd line is a physical barrier or a line marked on the ground that serves as a restraining line. The crowd line is placed at a specified distance from the show line. The restraining line and any necessary policing must prevent spectators or other nonparticipating persons from getting too close to the show line.

(8) *Control Point.* A control point is a specified location where the show sponsor, a designated representative, or a safety director manages the aviation event. The communications system with the capability necessary to control the aviation event must also be located at this site.

(9) *Event Flight Crewmember.* A balloon event flight crewmember is a participant, other than the pilot, who will be carried on board the balloon during the competition flight event. Balloon event crewmembers are differentiated from ground support launch and recovery crewmembers.

(10) *Head-on Area.* A head-on area is an arc of the courses toward the crowd from which debris of an aircraft experiencing catastrophic breakup or loss of control at a given altitude and distance from the crowd could impact persons in the crowd.

(11) *Inspector-in-Charge (IIC).* The FAA IIC is the aviation safety inspector (ASI) who conducts the feasibility study, participates in the preseason evaluation meeting, evaluates the application for waiver or authorization, recommends issuance or denial, and conducts the surveillance of the aviation event. (See volume 2, chapter 50.)

(12) *Markers.* The markers used in balloon competition tasks for dropping or marking targets are small flour bags, each having a maximum weight of 3 ounces and a fabric tail 4 inches wide and 6 feet long. The international standard for markers is 100 grams maximum weight with a tail 10 centimeters wide and 2 meters long. Markers conforming to these specifications should not injure persons or damage property.

(13) *Primary Spectator Area.* The primary spectator area is the main area designated by the sponsor for spectator use. It is bounded by the crowd line and has lateral limits (ends) that are well defined. This is the area where the public is generally expected to view the airshow. There may be more than one primary spectator area.

(14) *Secondary Spectator Area.* The secondary spectator area may be any other area where persons have a natural tendency to gather to observe the event. This is generally an area opposite the show line from the primary spectator area or an adjacent road. Secondary spectator areas should be identified by the show sponsor and the IIC before the aviation event begins. These are also areas where it may not be completely possible to control the presence of people. However, the show sponsor shall make every effort to prohibit secondary spectator areas. Secondary spectator areas can not be under the aerobatic maneuver area.

(15) *Show Center.* The show center is a visible reference point along the show line usually denoting the center of the aerobatic area.

(16) *Show line* The show line is a readily visible reference that provides the required distance from the spectators and enhances pilot orientation along the show line during the performance (figure 49-1). The show line also serves as the longitudinal axis for the show. Small rivers, roads, and runways all make excellent natural show lines. Snow fences spread flat on the ground may also make acceptable references, depending on the visual contrast. Lines of parked buses, cars, or boats, although less desirable, may be the only alternatives when natural show lines are not available. Special attention must be given to delineating show lines properly for high performance jet aircraft.

(a) To enhance safety, the show line may be moved toward or away from the spectator area to give the performer a more identifiable reference. However, the show line shall not be moved closer to the primary spectator area than the distance specified. (See paragraph 14.)

(b) The 500-foot show line represents the minimum horizontal distance that is authorized under § 91.119(c). This is NEVER waived with regard to any spectator area. Routines that involve several aircraft in formation or nonaerobatic flybys must ensure that the critical aircraft or critical wingman does not operate closer to the spectators than 500 feet. This may require the formation leader to adjust his/her flight path away from the spectator area. (See paragraph 14.)

(c) The show line shall be the line used by a performer or a formation leader to set up and recover from an aerobatic maneuver. In the case of aircraft formations, performers must adjust their positions to ensure that the critical aircraft is not closer than 500 feet from a spectator area.

(17) *Show Season.* A show season generally runs from March through October of a given year.

Geographic and climatological circumstances can lengthen or shorten the show season.

(18) *Waiver.* A waiver is an official document issued by the FAA that authorizes certain operations of aircraft in deviation from a regulation but under conditions ensuring an equivalent level of safety. The sections of part 91 that can be waived are listed in § 91.905.

B. Regulatory Authority. Issuing waivers of the regulations contained in part 91 is the responsibility of the Air Traffic Service. However, the authority to grant or deny waivers of the regulations listed in § 91.905 for aviation events has been delegated to Flight Standards. Requests for waivers or authorizations are processed at a Flight Standards District Office (FSDO) where the IIC has on-the-scene knowledge of the proposed operation and show site.

C. Scope of Waivers. Waivers vary depending upon the rules that an applicant requests to be waived.

(1) Some events require nothing more than waiving § 91.303(e) to permit aerobatic flight at less than 1,500 feet above the surface. Others may require waiving aircraft speed limitations, minimum safe altitudes, or limitations while operating in the vicinity of airports or within Class B, C, D, or E airspace. All waivers for air shows with aerobatic performances must waive the portion of § 91.303 that defines aerobatic flight.

(2) Appropriate parts of §§ 91.107, 91.117, 91.119, 91.127, 91.129, 91.131, 91.303, and 91.515(a)(1) may need to be waived, depending upon the location and complexity of the airshow.

(3) Waivers of the basic visual flight rules (VFR) weather minimums specified in § 91.155 may be considered only in areas where the entire event can be conducted with air traffic control (ATC) providing separation between participating aircraft and nonparticipating aircraft.

D. Wing Walking and Trapeze Acts. Wing walking acts may be approved when the performers have safely demonstrated the act in an aerobatic competency evaluation. Section 91.107(a)(2) and (3) may need to be waived for stunt persons only. All performances of helicopter trapeze acts must comply with the applicable requirements of 14 CFR part 133 concerning rotorcraft external load combination Class B or D operations. Wing walking acts using ultralights are not authorized. Overflight of the designated spectator areas for these acts shall be avoided.

E. Regulations that May or May not be Waived.

(1) Section 91.119(a) shall not be waived for aerial demonstration purposes. Section 91.119(b) and (c) may be waived only when the conditions stated herein are met.

(2) A waiver of § 91.119(b) and (c) is issued for aerial demonstrations by the U.S. Air Force Thunderbirds, the U.S. Navy Blue Angels, and the Canadian Defense Forces Snowbirds, as appropriate, to transition from egress routes and to ingress routes, and to fly as low as 200 feet above the highest obstacle on egress/ingress routes within 3 nautical miles (NM) of show center, as requested by the appropriate military command and approved by the local FSDO. These performers or teams have command-approved maneuvers packages that are accepted by the FAA. The maneuvers packages describe the normal routines. The packages do not approve airshow aerobatic maneuvers over congested areas, over persons, or over the primary or secondary spectator areas.

(3) A waiver may be issued to allow performers, other than those covered in paragraph 3E(2) above, to, as necessary, temporarily transition a congested area at less than the minimum altitudes described in § 91.119(b) and (c) while in nonaerobatic flight (as defined in paragraph 3A(1)(c) above).

(4) The transition to egress and ingress and to the aerobatic/flyby area must be in compliance with the following:

(a) During egress (figure 49-2) from the aerobatic maneuvering area, or in the case of the three North American military jet teams, while transitioning from the egress route for flight over a congested area, the pilots are expected to climb at a rate consistent with a safe operation or the best angle of climb pitch attitude for the aircraft involved. If prolonged or maneuvering flight over a congested area is required, the climb shall be continued to at least 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. During the positioning turns above the congested area, there shall be no airshow aerobatic maneuvers performed, as defined in paragraph 3A(1)(a) and (b) above.

(b) During ingress (figure 49-2) to the aerobatic maneuvering area, or in the case of the three North American military jet teams, while transitioning to the ingress route from flight over a congested area, the pilots are expected to leave the altitude being flown, as described above, so that a smooth transition may be made to the performance altitude in the aerobatic area. Steep approaches may be made, but in no case shall the descent angle to the aerobatic area be

less than that required for a normal approach for a landing of the aircraft involved.

(5) Other than the U.S. Air Force Thunderbirds and U.S. Navy Blue Angels, there have been only a very limited number of approvals for performers to overfly the primary spectator area at less than 1,000 feet AGL. The demonstrations are limited to a flight between 500 and 1,000 feet AGL, generally perpendicular to the crowd line, in nonaerobatic, wings-level, or climbing (normal rate) flight.

(6) No performer may overfly a secondary spectator area at less than 500 feet AGL.

(7) Performers must determine at each show site whether geographic and atmospheric conditions allow performance within the aircraft's limitations. If there are obstructions or atmospheric conditions, such as density altitude, that do not allow a safe transition over a congested area or back into the performance area, the operation may be allowed if the performers raise the altitude of the aerobatic or flyby maneuvers so that the egress and ingress over the congested area can be safely accomplished.

F. Program Coordinators. A National Airshow Coordinator is designated in FAA headquarters and Regional Airshow Coordinators are designated for the aviation event programs. The national coordinator is responsible for overall program monitoring and coordination of information and communications between the Department of Defense (DOD), FAA regions, and the public. The regional coordinators are responsible for monitoring the same programs in that region and for coordinating policy and information between FSDO's. The national and regional airshow coordinators function in an advisory capacity. IIC's making on-site evaluations are responsible for technical determinations as to the issuance or denial of a request for waiver.

(1) At any time that an IIC has an airshow issue that requires clarification or that may be of regional or national interest, the IIC shall contact the regional aviation event coordinator.

(a) The regional coordinator assists in resolving the issue and coordinates with the national coordinator in AFS-800, as necessary.

(b) AFS-800 shall consider the issue and shall determine if a policy change is necessary. If so, the division will prepare the new policy and issue it to FAA entities and the airshow industry, as appropriate. As per volume 1, chapter 1, section 2, paragraph 3 of FAA Order 8700.1, no regional supplements to aviation event policy are permitted.

(2) Initiation of enforcement investigations will be reported to AFS-800 as early as possible in the investigation.

G. Air Traffic Coordination. Any request for a waiver or authorization for a public aviation event with operations in controlled airspace must be coordinated with the appropriate ATC facility as early as possible prior to the issuance of FAA Form 7711-1. Any limitations or special conditions considered necessary by the Air Traffic Service shall be made a part of the Certificate of Waiver or Authorization.

(1) An ATC clearance for a low approach (i.e., a special military flyby) does not authorize a pilot to exceed the § 91.117(b) 200-knot speed limitation in Class D airspace. Such an authorization must be specifically requested by the pilot.

(2) ATC may authorize the pilot to exceed 200 knots in addition to a clearance for a low approach. In no case may a pilot construe such an authorization or permission to exceed the § 91.117(a) 250-knot speed limitation below 10,000 feet mean sea level (MSL).

H. Operation of Transponders. ATC transponders must be used in the appropriate airspace as required by § 91.215. The use of transponder and altitude reporting equipment serves to provide better service and increase safety. The ATC may waive these requirements if necessary for emergencies, equipment failures, or for traffic control reasons. If an aircraft does not have an electrical system or is not equipped with a transponder, prior approval must be obtained from ATC for that aircraft to participate in the airshow if that airshow is conducted in airspace requiring a transponder.

I. Special Communications Frequencies. The Air Traffic Service has been very cooperative in offering facility frequencies for use at aviation events. IIC's should inform applicants applying for waivers or authorizations of the procedures for obtaining special frequencies from the Federal Communications Commission (FCC).

(1) The applicant should submit the written request, including the number of special frequencies requested and the justification, 30 days before the event to:

FCC Special Services Branch
1270 Fairfield Road
Gettysburg, PA 17325-7245

(2) Applicants may obtain additional information from the FCC by calling (717) 338-2665, or may fax their requests to the FCC at (717) 338-2696.

However, if applicants wish to receive their frequencies by return fax, they must supply the FCC with the information needed for the FCC to fax the frequencies to the applicant collect.

J. Helicopter Acts Involving External Load Operations. When performing airshow acts that are considered Class B or D external load operations, it is important to ensure that no flights are conducted over persons on the surface unless those persons are part of the act. Consult § 133.25 for the requirements that govern this type of external load operation.

K. Required Crewmembers. With the exception of stunt persons, the special provisions of an airshow waiver provide that only required crewmembers by aircraft type design be carried on any civil aircraft engaged in an aerial demonstration. For additional persons to be on board a performing aircraft, the situation must meet the following conditions and be approved by the IIC.

(1) Each pilot must be qualified and current in the specific make and model of a civil aircraft.

(2) Each pilot must hold a Statement of Acrobatic Competency when the aircraft has functional dual flight controls for all three axes and aerobatic flight is conducted.

(3) Each crewmember must be on board to fulfill a definite safety function.

(4) This limited authority is for special situations and must not be abused. It includes such functions as:

(a) a qualified pilot obtaining experience before inclusion as a nonaerobatic aerial demonstration team member;

(b) a qualified pilot fulfilling a safety function from a pilot station, such as flying cover for closed course air racing;

(c) a qualified person who is required to operate aircraft systems during normal or emergency conditions in flight;

(d) a qualified pilot providing a one-time show site checkout for another qualified pilot who is unfamiliar with the site;

(e) a qualified industry formation training instructor pilot who is conducting formation training; and

(f) on board formation flight safety observers.

L. FAA Airports Coordination. Any event sponsor who requests a waiver for a public aviation event on

an airport certificated in accordance with 14 CFR part 139 must coordinate with the appropriate FAA district office and receive approval for the event ground operations plan prior to the issuance of FAA Form 7711-1. Encouraging event sponsors to include ~~airport management in the coordination~~ will greatly facilitate the process. Any limitations or special provisions considered necessary by the ADO shall be made a part of the Certificate of Waiver. As part of their normal program responsibilities, FAA ADO inspectors may from time to time request information concerning aviation event activities at airports other than those certificated in accordance with 14 CFR part 139.

4. INSPECTOR-IN-CHARGE. To enable the FAA to most effectively manage the aviation event program, FSDO managers shall assign an IIC to the tasks involved with processing an application for a waiver or authorization for an aviation event. These duties include the preseason evaluation meeting, the evaluation of the application and recommending issuance or denial, and, if appropriate, the surveillance of the aviation event. The decision to conduct surveillance of an aviation event is the responsibility of the FSDO manager. Events that have a significant public interest, that have turbine-powered aircraft performing, that have sponsors or performers who are inexperienced or are known to have committed acts of noncompliance with waiver/authorization provisions in the past, or that are conducted at controversial show sites, should be monitored by the IIC who processed the application for a waiver or authorization.

A. IIC Qualifications. The IIC assigned this task and the subsequent surveillance must have completed on-the-job training (OJT), and must have participated in the issuance of three certificates of waiver. The IIC must also have participated in the surveillance of three aviation events as a trainee with a qualified IIC. For events where a military aerobatic demonstration team performs, the IIC must have satisfactorily completed OJT for a military aviation event, including participation in the site feasibility determination required by DOD, the preseason evaluation meeting, the waiver preparation, and the surveillance.

B. No Inspector Available. If the FSDO does not have an inspector who meets the above qualifications, the FSDO manager shall contact the regional airshow coordinator to request an inspector who is qualified to perform the tasks of an IIC. After the regional coordinator identifies an available IIC, FSDO managers should work out the arrangements necessary to accomplish the task.

5. APPLICATION AND APPROVAL. Applications for aviation events are processed by an inspector who has on-the-scene knowledge about the proposed operation and site suitability.

A. Form Used. FAA Form 7711-2, Certificate of Waiver or Authorization Application (figure 49-3) is used. All items on the form may not apply to each event. In other cases, additional information may be required. The most current editions of FAA Advisory Circular (AC) 91-45, Waivers: Aviation Events, or AC 105-2, Sport Parachute Jumping, as appropriate, provide most information necessary to plan and conduct a safe event.

B. Authority to Sign. The FSDO manager should sign a waiver or authorization when the application is approved.

C. Ultralight Vehicles, Hanggliders, and Aircraft. There has been confusion regarding Experimental Category, amateur-built aircraft performing aerobatic maneuvers at airshows. If the aircraft is not prohibited from aerobatic flight and is airworthy, it can be used in exhibition flights. Additionally, any ultralight that meets the applicability of 14 CFR part 103, § 103.1, may be operated as an ultralight vehicle under part 103, or the operator may elect to certificate the vehicle and operate under the applicable aircraft regulations. If the ultralight has been certificated as an aircraft, all operations are subject to the certification requirements (aircraft and pilot), airworthiness requirements, and applicable operating rules. The FAA does not require certification of operators of ultralight vehicles that meet the provisions of § 103.1.

(1) Aerobatic flight demonstrations by ultralight vehicles or hanggliders should be included on a Certificate of Waiver or Authorization, with appropriate special provisions, only when the applicant has provided the issuing office with a statement of determination that the vehicle and the operator are able to conduct the proposed demonstration without creating a hazard to persons and property on the surface. The statement should contain a summary of how the determination was made.

(2) Ultralight vehicles, hanggliders, and gyrocopters must meet the same separation standards for airshow performances that apply to conventional aircraft with a level flight cruise speed of less than 156 knots using 75 percent power (Category III).

(3) Wing walking acts using ultralights are not authorized.

D. Air Carrier Aircraft Demonstrations. Flight demonstrations conducted at an airshow under the provisions of a waiver by any air carrier certificate

holder require thoughtful planning and preparation by the carrier. A past incident occurred involving an air carrier conducting a flyby or low pass in a B-737 along the runway during a fly-in for small airplanes. Since many of the airplanes in the traffic pattern were very small, slow, and, in some cases, without communication equipment, a greater risk of a midair collision was present than under normal air carrier operations. When an air carrier that operates Transport Category aircraft requests authorization to conduct a flight demonstration at an airshow, the IIC shall require the following:

(1) The air carrier must develop a performance package that describes in detail the entire flight profile. The performance package shall specifically address the make and model of the aircraft and take into consideration any specific flight safety conditions of that aircraft.

(2) A waiver provision should be developed with the following limitations:

- minimum altitude - 200 feet AGL
- maximum bank - 30°
- maximum speed - 300 knots
- minimum speed - V_{ref} for the configuration and weight of the aircraft, or as required for the go-around sequence
- touch-and-go landings should be permitted only when the carrier has addressed the crew procedures, the runway requirements, and the abort procedure in sufficient detail

(3) Coordination with the air carrier's principal operations inspector (POI) is necessary before approval by the IIC.

6. ASSISTING SPONSORS WITH WAIVER OR AUTHORIZATION APPLICATIONS.

A. Sponsor Planning. Thorough planning has a direct bearing on the success and safety of any event. The sponsor should be encouraged to develop an effective plan for all facets of the event. The inspector should assist the sponsor by discussing the following subjects:

- (1) the type of event;
- (2) the status of performers (military and/or civil);
- (3) the site selection (airports, fairgrounds, other sites);
- (4) the planned crowd control and policing of the aerobatic/flyby area;

(5) the emergency equipment and personnel such as physician, ambulance, fire truck, crash wagon, and associated plans of action;

(6) the normal airport traffic and ATC consideration; and

(7) the vehicular traffic problems.

B. Sponsor Experience. The experienced sponsor is generally well acquainted with the requirements and procedures for obtaining the waiver or authorization. First time sponsors may not be aware that a waiver or authorization is required.

(1) The most current edition of AC 91-45 or AC 105-2 contains important information for planning and conducting safe aerial demonstration events. They also provide information on how to request FAA Form 7711-1.

(2) Regardless of the purposes for which an aviation event is sponsored, applications for events or sites judged unsafe are not accepted. A waiver is issued only if the FAA determines that a proposed event is in the best interest of public safety.

C. FAA Form 7711-2, Certificate of Waiver or Authorization Application.

(1) Applications for airshows or air races should be submitted at least 45 days before the date of the event, 60 days for events with a North American military jet team. Only after all requirements have been met by the sponsor, approval or denial of the application should be completed within 30 days of receipt by the FSDO.

(2) Applications for parachute jumps made over or into a congested area or open air assembly of people must be presented at least 4 days before an event. Approval or denial of the application must be completed within 3 days of receipt by the FSDO.

(3) The completion and submission of FAA Form 7711-2 and all supporting documents are solely the applicant's responsibility.

(4) Upon approval, FAA Form 7711-2 and its attachments become a part of FAA Form 7711-1.

(5) The applicant should attach maps, charts, diagrams, or other data appropriate to the activities and locations to FAA Form 7711-2 upon application for a Certificate of Waiver or Authorization.

(6) For most events, the supporting data must address the following major concerns.

(a) When the public attends the event, spectator areas shall be provided to isolate spectators from:

- i. the flight areas;
- ii. the active runways;
- iii. the run up areas; and

iv. ~~the other active areas, such as emergency or police helipads or parachute landing areas.~~ There should be provisions for sponsors to brief pilots who have static display aircraft to use a "pushback" procedure to reposition the aircraft away from spectators whenever possible.

(b) Supporting documents should describe the methods that will be used to ensure security of areas outside of the designated spectator area, especially the area under the aerobatic maneuvering area.

(7) Except for official military pilots, each pilot must be properly certificated and rated for the aircraft to be flown. In addition, each nonmilitary pilot who performs aerobatics must possess FAA Form 8710-7, Statement of Aerobatic Competency (figure 49-4) or Transport Canada Aviation (TCA) Form 26-0307, Statement of Aerobatic Competency signed by an inspector. This includes foreign civil airmen.

(8) Non-airmen participants, such as parachutists, can be accepted on the basis of a license issued by the United States Parachute Association (USPA) or similar organizations. The FAA does not require certification of operators of ultralight vehicles, wing walkers or trapeze occupants, ribbon cut personnel, and drivers of ground vehicles for a car-to-plane transfer, and other non-airmen participants.

7. AIR RACES.

A. Course Design. Closed-course pylon air racing, including both demonstration and competitive events, are conducted over a fixed, short-distance race course, usually located on or adjacent to an airport. It is the sponsor's responsibility to lay out the course so that hazards to spectators and other persons on the surface are prevented. Only persons and vehicles authorized by the participating race organization shall be permitted beyond the crowd line during racing operations.

(1) Authorized persons may include press, aircraft support crews, judges, and officials at the start line.

(2) Authorized persons must clear the runway and move back to at least the runway "hold short" line 1 minute before the launch for standing starts. No one shall be permitted in front of the first row of aircraft after this time except the starter flag team.

(3) Pylon crews, press, and vehicles, except the home pylon flag crews, shall remain inside the pylon course during races. Race timing teams are permitted in the area between the crowd line and the show line during racing.

(4) Non-competitive demonstration races should be handled like a competitive event, including a determination of pilot competency. Demonstration races should be choreographed from takeoff to landing. New classes of racing aircraft must be found competent by a similar existing air racing organization.

B. Participants. A fundamental principle of closed-course air race safety, including demonstration events, is that all of the participants need to be associated with an organization that is dedicated to the sport. The structure and existence of a credible air racing organization provides an internal level of safety that would not otherwise exist. It is recommended that the IIC determine the following before issuing a waiver for an event that includes closed-course air races.

(1) Determine whether an air race organization exists that is capable of evaluating the participating pilots and aircraft.

(2) Determine whether the participants are qualified by the air race organization.

(3) Obtain statements from the organization regarding the air racing competency of each airman.

(4) Obtain information from the organization regarding the qualifications of those who are appointed by the organization to evaluate the competence of airmen.

(5) Determine whether the organization has established safety operating rules.

(6) Ensure that the aviation event is not an ad hoc air race, but rather has the benefit of thoughtful planning and scrutiny by an organization responsible for the entire operation.

C. Air Racing Organizations. The FAA has determined that the following air race organizations have credible programs, policies, and procedures for determining air racing pilot competence and developing race course designs for the safe conduct of air racing events, including demonstration races. The current contact for each air race organization can be found at <http://www.faa.gov/avr/afs/airshow.htm>.

(1) International Formula One

(2) Unlimited Division

(3) AT-6/SNJ Racing Association, Inc.

(4) Formula V Air Racing Association

(5) Professional Race Pilots Assn. (Biplane)

(6) Sport Class

(7) T-28 Air Racing Association

D. Typical Race Courses. A diagram of a typical air race site is shown in figure 49-5. A diagram of a typical unlimited race course is shown in figure 49-6. Two examples of suitable air race site diagrams are shown in figure 49-7. The method of determining the various distances used is discussed in the following paragraphs.

E. Race Course Design. A satisfactory pylon air race course design involves the shape of the course and its relationship to the area around the course, especially the spectator areas. Both of these factors depend upon the maximum speed of the racing aircraft and the maximum "g" loading (acceleration forces) that the aircraft are expected to encounter when flying the race course in a normal manner. The maximum height at which the aircraft are expected to fly during the race is also a factor.

F. Race Course Speeds.

(1) The following are typical speeds for each racing class.

- (a) Formula V: 160 mph
- (b) Sport Biplane: 210 mph
- (c) AT-6/SNJ: 225 mph
- (d) International Formula One: 250 mph
- (e) T-28: 300 mph
- (f) Unlimited: 450 mph and higher

(2) As additional classes become active, they shall be added to this list with appropriate speeds specified.

(3) The maximum "g" loading for a race aircraft flying the course in a normal manner has been set at 3.5 "g's." In actual racing, where maneuvering and turbulence is encountered, momentary "g" loadings in excess of this figure can be expected.

(4) The speed and "g" loadings permit the calculation of the minimum radius turn that should be permitted in the design of the race course. The formula for the turn radius for a given "g" loading and speed is shown below. (Using a value of 3.5 for "g," the minimum turn radius is shown for each racing class in figure 49-8.)

Minimum Turn Radius Formula

$$R = \frac{V^2}{32.2 \times \sqrt{g^2 - 1}}$$

R = Minimum turn radius (feet)

V = Aircraft speed in ft/sec or V = knots x 1.689

32.2 = Acceleration force of gravity (ft/sec²)

g = "g" force in turn

(5) The angle of a turn (the change in course required to negotiate the turn) should be planned to avoid forcing a race aircraft to make the turn too sharply. A maximum turn angle that does not exceed 65° has been found to be satisfactory.

G. Race Course Show line. During the race, aircraft occupy a raceway around the race course. The edge of this raceway closest to the spectator area is the show line, over which no aircraft is permitted to cross while racing.

(1) The raceway width may vary from 150 feet to 500 feet in the various racing classes so that the aircraft may pass one another. The critical requirement is that no racing aircraft is permitted to cross over the show line during the race.

(2) The minimum turn radius, the maximum turn angle, and the raceway width define the limits of a satisfactory race course. The race course relationship to the spectator areas or other populated area must also be defined. All racing classes require a distance of 500 feet between the primary spectator area and the show line.

(3) An additional safety area is required to ensure that spectators are protected in the event that debris leaves a race aircraft. Should this occur while the aircraft is in a turn, the debris will follow a path tangential to the turn from the moment it departs the aircraft.

(a) The theoretical straight line distance to a point on the ground that the debris will follow (ignoring air resistance) depends upon aircraft speed and altitude. This distance is the scatter distance. A maximum racing altitude of 250 feet is acceptable for aircraft weighing in excess of 1,000 pounds (presently, the AT-6/SNJ and the Unlimited class). A maximum racing altitude of 150 feet is acceptable for aircraft weighing 1,000 pounds or less (presently the International Formula One, Sport Biplane and Formula V classes). The scatter distance for each racing class is shown in figure 49-8.

Scatter Distance Formula

$$S = V \times \sqrt{\frac{2 \times A}{32.2}}$$

S = Scatter distance (feet)

V = Aircraft speed in ft/sec (V = knots x 1.689)

A = Maximum aircraft altitude (AGL) (150 or 250 feet)

32.2 = Acceleration of gravity (ft/sec²)

(b) The theoretical location of all possible debris impact points from an aircraft in a turn is a circle whose radius is the square root of the sums of the squares of the turn radius and the scatter distance. This radius is the scatter radius (figure 49-8).

Scatter Radius Formula

$$Sr = \sqrt{(R^2 + S^2)}$$

Sr = Scatter radius (feet)

R = Turn radius (feet)

S = Scatter distance (feet)

(c) In order to provide an acceptable margin of safety, the difference between the turn radius and the scatter radius is multiplied by a safety factor of 1.5 and added to the turn radius to define the safety radius (figure 49-8).

Safety Radius Formula

$$Sfr = R + 1.5 \times (Sr - R)$$

Sfr = Safety radius (feet)

Sr = Scatter radius (feet)

R = Turn radius (feet)

(4) The critical turn with respect to the safety radius is the turn that enters the portion of the race closest to the spectators. The safety area is constructed as follows:

(a) bisect the course change angle for the critical turn;

(b) mark off the minimum turn radius for the class of aircraft racing, as shown in figure 49-5, from the pylon position to a point on the angle bisector; and

(c) draw an arc, whose radius is the safety radius, from the point described in paragraph 13G(4)(b) above. No spectators shall be within this arc (figure 49-5).

(5) In some cases, it may be expedient to design the race course around the spectator area. While spectator area-to-show line distances are unchanged, the safety zone is now outside the spec-

tator area and is no longer a factor. Roads to this kind of a race course layout must be completely closed off to the spectator area during the race.

(6) Race courses are normally flown in a counterclockwise direction (left turns). Problem sites may require flying the course in a clockwise direction (right turns). Other modifications of the race course, such as changing the angular relationship of the spectator line to move the crowd away from a turn pylon, or lengthening the race course to move the turn pylon away from the crowd, may also be necessary.

8. BALLOON MEETS AND COMPETITIONS.

A. Balloon Meets. Routine balloon ascensions can usually be conducted in accordance with the provisions of 14 CFR part 91, and no waiver is required. However, balloon competitions will likely require a Certificate of Waiver or Authorization with appropriate special provisions to maintain the safety of the nonparticipating public (figures 49-9 and 49-10).

B. Balloon Operations. Flight competitions by manned balloons often involve operations at horizontal and vertical distances less than those required by § 91.119(b) and (c). Operations at these altitudes are necessary to take advantage of varying wind conditions at different altitudes which are the balloonist's only means of directional control. These operations are acceptable when appropriate limitations are developed to ensure public safety and the safety of the participants.

C. Public Safety. Ballooning has grown significantly in recent years, and competitive tasks have been refined and standardized. The FAA's concern is that every effort is made to ensure public safety. The intent of § 91.119 should never be compromised when issuing waivers and developing special provisions.

(1) Target areas must be under the control of event officials. The use of portable bull horns or public address systems provides an adequate means for crowd control, or for directing balloonists away from the target area in an emergency. Balloon landings are not normally permitted closer than 1,500 feet from the target or goal, although event officials may allow a reduction of this distance to 500 feet for safety considerations. Only balloon recovery ground support crewmembers and authorized event officials shall be present at the landing site.

(2) The relatively slow speed of balloons allows spectators to move from harm more easily than at an airshow where fast moving aircraft are performing. Accordingly, the designated spectator area can be minimized to a 200 foot radius away from the designated balloon goal/target. IIC's should ensure

that the sponsors assure spectators remain clear of the goal/target area during balloon meets or competitions.

D. Balloon Competition Event Waivers. To be found eligible for a waiver of § 91.119(b) and (c), the applicant must prepare and maintain an Organized Manned Balloon Competition Manual which has been found ACCEPTABLE by the jurisdictional FSDO. The contents of the manual are the basis for issuance of the waiver. The applicant and the participants must comply with the balloon manual contents and requirements. No operations shall be conducted under a waiver except while in VFR conditions during the period from sunrise to sunset, as specified in § 91.155.

(1) Event organizers should be asked to submit a set of competition rules when applying for a waiver. Although this is not a regulatory requirement, it should be encouraged for the sake of conformity and safety. These competition rules should generally conform to a recognized industry standard, such as those developed by the Balloon Federation of America (BFA) for events sanctioned by the BFA Competition Division. (figure 49-11).

(2) A waiver of § 91.119(b) and (c) for organized balloon competitions can be issued based on submission of an application containing the proposed operations and contents of the Organized Manned Balloon Competition Manual. (See paragraph 8E below.)

(3) Section 91.119(b) and (c) should be waived only to the EXTENT NECESSARY to accommodate the event while allowing an acceptable level of safety. Evaluation of the site by the IIC determines the actual separation distances for a specific event; however, the following MINIMUM distances and special provisions MUST be observed.

(a) Section 91.119(b) may be waived to allow flight over a congested area at an altitude of no less than 500 feet above the highest obstacle within a 500 foot horizontal radius of the balloon. This section of the regulation may only be waived within a specified maximum distance from designated launch sites and/or target areas. This designated area must be determined by the event organizer and the FAA; this area must also be clearly delineated in the event organizer's manual before the event. (A scaled map, drawing, and/or aerial photographs should be in the event organizer's manual before the event.) The designated area should be the minimum area necessary to accommodate the event, and the area should be consistent with the event organizer's ability to control operations. A waiver of § 91.119(b) should not be issued if the target area is so small that a normal descent (200 to 300 feet per minute) cannot be made.

(b) Section 91.119(b) may be waived to allow flight above, but not less than 75 feet from, any open-air assembly of persons (designated spectator area) under the direct control of the event organizer.

(c) Section 91.119(c) may be waived to allow flight over open water or sparsely populated areas, no closer than 200 feet horizontally to any person, vessel, vehicle, or structure.

E. Organized Manned Balloon Competition Manual. The following is a list of the minimum required topics that must be addressed in the competition manual for a balloon event. Other information may also be included (figure 49-12).

(1) Responsibilities and procedures:

- (a) duties of personnel;
- (b) registration and airworthiness determinations;
- (c) pilot qualifications;
- (d) pilot/crewmember briefing responsibilities;
- (e) copy of letter(s) of agreement; and
- (f) event flight crewmember qualifications, experience, and maximum numbers onboard each balloon for each type of event.

(2) Ground operations:

- (a) clear areas;
- (b) spectator areas (designated primary and potential secondary areas);
- (c) crowd control requirements; and
- (d) landowner relations/notification.

(3) Flight operations:

- (a) areas of operations;
- (b) types of operations;
- (c) altitudes;
- (d) weather requirements;
- (e) communications requirements; and
- (f) air traffic coordination.

(4) The Organized Manned Balloon Competition Manual must incorporate § 91.119(b) and (c) limitations as appropriate to the event in a form and manner acceptable to the FAA and the event organizer. The event organizer should describe in the manual the

manner of operations that are needed to comply with the event waiver as clearly as possible.

(5) The Organized Manned Balloon Competition Manual must include a list and description of all events, tasks, and races to be included in the waiver.

F. Personnel. The Organized Manned Balloon Competition Manual must contain the names of the following personnel who are responsible for the event: the flight director (event director); the person responsible for establishing and maintaining crowd control; the event organizer's FAA liaison; and the persons responsible for obtaining weather data and conducting the pre-event pilot and event flight crewmember briefings.

G. Letters of Agreement. In addition to the Organized Manned Balloon Competition Manual, a letter of agreement clearly detailing all responsibilities may provide an excellent means of control. In the manual the event organizer outlines the responsibilities assumed, such as crowd control, notification, communication, and briefing of participating pilots and event flight crewmembers. ATC identifies the services they provide, such as up-to-date weather, a portable tower, or direct communication line with the tower. The FSDO identifies the necessary aircraft and airman certification qualifications and site inspection requirements through the waiver process.

H. Balloon Event Flight Crewmembers. Only pilot and event flight crewmembers, as described in the Organized Manned Balloon Competition Manual, may be carried onboard any balloon operating under the waiver issued to the event organizer.

(1) Event flight crewmembers will be restricted to the minimum number required for the type of event as specified in the Organized Manned Balloon Competition Manual. Event flight crewmembers should be kept to a minimum for competitive events.

(2) All event flight crewmembers must have received appropriate training concerning their duties relative to the event, and must attend the event pilot and flight crewmember briefing before each event. These crewmembers must sign a statement that they have been briefed and that they are designated event flight crewmembers for the purpose of the specific event for which the waiver was granted.

(3) The pilot-in-command (PIC) of each balloon is responsible for obtaining the signed statements on a form furnished by the event organizer. This form will be maintained by the PIC during the event,

and returned to the event organizer and made available to the FAA upon request.

(4) Balloon event flight crewmembers are differentiated from ground support launch and recovery crewmembers.

I. Maximum Wind Speed. The maximum wind speed for launch and at the target zones is mutually determined by the event organizer/flight director and the FAA. These limitations shall be placed in the operations manual. The maximum wind speed limitations should be determined after considering the local terrain conditions and the competency of the participating airmen and the limitations of the aircraft. If a balloon does not have an FAA-approved flight manual, operating limitations can be found on the type certificate data sheet (TCDS). The actual means of determining the wind speed must be mutually agreeable to the FAA and the event organizer. The IIC and/or the event organizer/flight director may wish to consider moving the designated spectator area barriers if the wind speed is excessive.

J. Types of Competitive Tasks. Competitive tasks are exercises in navigation using changes in wind direction. The winner of a task is the balloonist who can best take advantage of changes in wind direction by ascending and descending. Event organizers generally engage launch directors to control staggered launch times and ensure safety for multiple launches. The following are some typical balloon competitive tasks, based on information provided by the BFA. The indicated landing distances have been established by BFA to keep balloons, which have already dropped markers, clear of the target area, for the approach of other balloons.

(1) *Pilot Declared Goal (PDG).* Pilots define goals by description and map reference. The goals are declared in writing and given to a timekeeper. Each pilot flies from the designated launch area and attempts to drop a marker close to the selected goal. The result is the distance from the declared goal to the observed mark. The shortest distance wins. The landing after dropping the marker cannot be less than 1,500 feet from the declared goal.

(2) *Judge Declared Goal (JDG).* Each pilot flies from the designated launch area and attempts to drop a marker as close as possible to a goal set by the officials. The result is the distance from the declared goal to the observed mark. The shortest distance wins. The landing after dropping the marker cannot be less than 1,500 feet from the declared goal.

(3) Multiple Judge Declared Goal (MJDG).

Each pilot flies from the launch area and chooses one of a number of goals set by the officials. The pilot attempts to drop a marker near the goal chosen. The result is the distance from the observed mark to the nearest goal. The shortest distance wins. The landing after dropping the marker cannot be less than 1,500 feet from the selected goal.

(4) Elbow (ELBO).

Each pilot flies from the launch area and attempts to achieve the greatest change of flight direction during the flight with the least angle of divergence. A 180° change in direction with a zero angle of divergence is best. Two concentric circles, specific distances apart, surround the launch point. The pilot drops two markers. The first marker must be dropped between the inner and outer circle. The second marker must be dropped within the outer circle. The second marker cannot be less than 5,000 feet from the first marker. Landing after dropping the marker is at the pilot's discretion.

(5) Hare and Hound (HNH).

In the West, this may be referred to as the "Road Runner Race." The lead balloon, "the hare," takes off several minutes before the rest of the balloons and drops a marker at a designated point. The hare balloon deflates and is removed from the landing area. The marker dropped by the hare balloon becomes the target for the later balloons, "the hounds." The hounds try to drop markers as close as possible to the hare balloon's target. After dropping the marker from the hound balloon, landing is at the pilot's discretion but cannot be less than 1,500 feet from the target.

(6) Convergent Navigational Task (CNT).

Officials establish a goal, but pilots find their own launch areas for the attempt to reach the goal. The boundary of the launch area declared by the pilot is the physical boundary of a field or a circle with a 300-foot radius from the inflation point, whichever is less. The officials place a target at the goal 30 minutes before the launch period. The pilot launches from a selected site, attempts to navigate to the target, and drops a marker. The result is the distance from the target to the marker. The shortest distance wins. The landing after dropping the marker is at the pilot's discretion but cannot be less than 1,500 feet from the target.

(7) Fly On Task (FOT).

The pilot declares a goal to fly to after dropping a marker in another task.

(8) Gordon Bennett Memorial (GBM).

The competitors maneuver their balloons a prescribed distance from a target on the ground (scoring area). They then attempt to maneuver back to the scoring area and drop markers on the target. As long as the

scoring area is large enough and kept clear of spectators, this event should cause no significant problem.

(9) Watership Down.

This is a two-part task. Pilots find their own launch sites and fly to a target established by the officials. At a specified time before the launch, a hare balloon takes off adjacent to the target and drops a marker at a designated point. This marker becomes the second target. The hare balloon deflates, and the envelope remains flattened on the ground to serve as a guide to the second target area. Each competing pilot drops a marker as close as possible to the first target, which was the launch site of the hare balloon. Pilots then fly-on to drop a second marker as close as possible to the target marker placed by the hare balloon.

(10) Key Grab.

This event usually has a target (generally a tall pole with the keys to a new automobile affixed to the top) in a centralized location. The balloonist must depart a predetermined distance from the target. The object is to maneuver the balloons, one by one, over the target so the pilot can attempt to grab the keys as the balloon goes by the pole.

(a) The area around the pole must be completely clear of spectators and under the control of the event officials. Event organizers should have portable bull horns or a public address system to control the crowd movements or to direct the balloonist away from the target area in an emergency. If these precautions are observed, a waiver of § 91.119(c) can be issued to allow operations closer than 500 feet to the crowd.

(b) The event organizer must establish procedures to ensure that the balloonists will abort the key grab attempt if it becomes apparent that the balloons' ground tracks will not be within the operating area or when a realistic chance for the key is no longer possible. The landing areas must be segregated from the spectators; only bona fide recovery crews should be present in the landing area to assist the balloonist with recovery. All participants must be briefed before the operations.

9. MILITARY AERIAL PERFORMANCES.

A. General Considerations. The guidelines in this paragraph apply to military aircraft, military pilots, and parachute teams specifically designated to perform missions for the DOD, the Canadian Defense Forces, command approved tactical demonstration aircraft as well as some foreign flight demonstration teams.

(1) FAA headquarters has not issued any special approvals, authorizations, waivers, or blanket

exemptions concerning any military team airshow performances.

(2) The teams' standard maneuvers are normally acceptable within FAA policy. Each team knows the FAA policy applies to them.

(3) The teams are not exempt from any regulation or policy that is used in issuing a waiver.

(4) DOD has agreed to approve participation at official events only when safety is not compromised.

(5) Under no circumstances shall airshow aerobatic maneuvers be conducted over spectator or congested areas (figure 49-2). While the guidelines in this section are primarily oriented to U.S. military precision flight demonstration teams, certain procedures may also be applicable to the Canadian Defense Forces Snowbirds.

B. DOD Emphasis. DOD has emphasized the importance of military participation in airshows. This participation is regarded as an essential contribution to armed forces recruiting, retention, and community relations missions.

C. Approved Profiles.

(1) All performances shall be in accordance with a planned profile approved by the applicable military command. The various military teams provide AFS-800 with command-approved maneuver packages for acceptance. The sanctioned North American Military flight demonstration teams are the U.S. Air Force Thunderbirds, the U.S. Navy Blue Angels, and the Canadian Forces Snowbirds.

(2) IIC's shall incorporate procedures into the airshow briefing to ensure that performers who hold command approval for such maneuvers can show evidence of FAA headquarters' acceptance, produce documentation of exactly what was approved and accepted, and graphically show where the checkpoints will be at the showsite for accomplishment of the maneuver or turn. This should be accomplished as early as possible in the event planning process.

D. Team Qualifications and Training. The proficiency and ability of the members of military units are determined by the military command and do not require approval by an FAA IIC. Team members undergo rigorous training to develop the skills necessary to perform the precision maneuvers and routines. Team members should not be questioned about their competency to perform their approved routines.

E. Military Participation. DOD requires the event sponsor, or a designated representative, to complete a

Request for Military Aerial Support Form (DD Form 2535) when requesting a U.S. military aerial demonstration team on or off a military installation and when requesting military aircraft participation off a military installation. The sponsor or representative must forward the form to the appropriate FSDO. The FSDO completes Section V (program), FAA or Appropriate Governmental Agency Coordination (Airspace Coordination) (figure 49-13). The proposed site requiring a waiver must be classified as either satisfactory, conditional-satisfactory, or unsatisfactory during a site feasibility study conducted by an FAA inspector. A satisfactory classification indicates that a waiver can be issued following compliance with other requirements. A conditional-satisfactory classification will include specific conditions that need to be met, such as closing roads, evacuating buildings, etc. An unsatisfactory classification indicates that the requested activity cannot be performed safely at the proposed site, and a waiver shall not be issued. If the site is deemed unsatisfactory by the FAA, the request is not accepted by DOD.

(1) The feasibility study is usually conducted during the summer months for an event that will take place the following show season. The inspector should conduct this study in a TIMELY MANNER, thereby providing the sponsor ample time to submit the DOD form before the DOD suspense date. Normally, an on-site inspection IS REQUIRED to determine the status of new construction or other environmental changes in the area.

(2) If the inspector believes that templates of the proposed maneuvers and the 7.5 minute series Topographic Quadrangle Map for the area are necessary to conduct the feasibility study, the inspector should request the templates and the map from the sponsor of the event. This may be necessary at a site where the U.S. Navy Blue Angels, the U.S. Air Force Thunderbirds, or the Canadian Defense Forces Snowbirds are appearing for the first time or at sites where new construction may affect a location's suitability for an airshow. Availability of templates varies from year to year. The standard aerobatic maneuver area for U.S. military jet performers is 1 NM either side of show center and 3,000 feet (2,700 feet minimum) across from front to back. Also, the maneuvers package for the current year should be used to evaluate this site considering any option maneuvers outside of the 1 NM area either side of the show center.

(3) Requests for military participation (fly-by) at civic events, funerals, etc., should be approved if the site is satisfactory with the understanding that no sections of part 91 will be waived.

(4) The U.S. Air Force Thunderbirds, U.S. Navy Blue Angels, and occasionally the Canadian Forces Snowbirds will conduct preseason meetings with the airshow sponsor and jurisdictional FAA offices. These meetings will usually occur in the winter months before the start of the airshow season. Participation in these meetings is mandatory for the jurisdictional FSDO. It is imperative to review site suitability in detail with the airshow sponsor and military demonstration team representative at this meeting. This will include, but is not limited to, the placement of the aerobatic maneuver area and impact on the non-participating public on the surface under this "box," review of proposed ingress/egress routes that will require FAA approval, and any impact on scheduled air carrier operations.

F. Specialized Teams. The North American Armed Forces also authorize specialized teams that demonstrate the capabilities of one particular aircraft; e.g., the U.S. Air Force F-16 Tactical Demonstration (TAC DEMO) Team. They may also develop maneuver packages which define the aerobatic routine to be performed at aviation events. If so, these packages, as well as a list of pilots authorized to conduct the aerobatic routines, are submitted to AFS-800. AFS-800 distributes copies of the command-approved packages to the regional airshow coordinators. Only the designated aircraft and pilots may perform at airshows in which § 91.303 is waived.

G. Special Considerations. Although the FAA has emphasized the need to maintain standard airshow separation requirements, U.S. military flight demonstration teams (Thunderbirds, Blue Angels and Snowbirds) may request and receive a special waiver of § 91.119(b) and (c). This special waiver would permit transition to and from flight at an altitude as low as 200 feet AGL, along an FAA-APPROVED ingress/egress route to and from the aerobatic area within a 3 NM radius from the designated show center (see paragraph 3E). The request for a special waiver must be made by the commanding officer of the military team. The waiver shall be approved when the following conditions are met.

(1) An on-site survey of the demonstration area must be completed by the team's commanding officer or by a team member designated by the commanding officer.

(2) A coordination meeting must be held to discuss the potential impact of the operation on the surrounding area. The meeting must be attended by the team's commanding officer or a designated team

member, the waiver applicant or a designated representative, and the appropriate FSDO representative.

(3) The FAA must receive a letter from the commanding officer or the designated team member requesting a waiver of § 91.119(b) and (c). The letter must contain the following information:

(a) the specific altitudes and the area over which the special waiver is required;

(b) a statement that the commanding officer shall accept full responsibility for the operation; and

(c) a statement that the commanding officer or designated team member, as an authorized representative of the DOD, has done the following:

i. completed an on-site survey of the proposed area of operation;

ii. discussed the impact of the operation with the waiver applicant and the appropriate FSDO representative; and

iii. determined if the demonstration, as provided to the FAA in the command maneuvers package, can be safely conducted in the area.

(4) Flight over congested areas on FAA approved ingress/egress routes within 3 NM of show center as low as 200 feet AGL is authorized if the IIC can determine that the ingress/egress routes are:

(a) not over persons on the ground, if the performing aircraft will be flown inverted outside of the aerobatic maneuvering area;

(b) not over or within 500 feet laterally of open air assemblies of persons;

(c) not over sensitive areas such as occupied schools, hospitals, crowded shopping mall, etc.

NOTE: Obstruction clearance is the responsibility of military flight demonstration team, but should be discussed with the team representative.

H. Arrival Shows. Aerial demonstration teams often require an arrival demonstration. This normally consists of several passes for visual familiarity with existing landmarks and maneuvers practice using these landmarks. Details of the arrival should be worked out during the coordination meeting described in paragraph 9G(2) above.

(1) If the arrival show includes aerobatic operations over populated areas, the arrival show cannot be authorized. A good rule of thumb for determining if an arrival show should be approved is, "Will everything necessary for the event itself be taken care of

(including a waiver) except crowd control and emergency facilities?" If the answer to this question is no, then an arrival show can only consist of normal flight operations conducted within the regulations.

(2) The military often asks to have the team advance coordinator or operations officer accept the arrival show briefing and relay all necessary information to the team. The IIC should allow this if the team representative is a rated aviator or a non-rated officer serving with the team. Briefings with the team representative must be completed before the team's arrival at the show site.

I. DOD-Sanctioned Military Teams. Only the Aviation Liaison Officer in the Office of the Assistant Secretary of Defense for Public Affairs can sanction (DOD-sanction) a team. The only DOD-sanctioned teams are:

U.S. Air Force Thunderbirds
Airshow Coordinator
445 Tyndall Ave.
Nellis AFB, NV 89191-6079
(702) 652-9593

U.S. Army Parachute Team
Operations Officer
Box 70126
Ft. Bragg, NC 28307-0126
(919) 396-2036

U.S. Navy Blue Angels
Events Coordinator
NAS Pensacola, FL 32508
(904) 452-2585

U.S. Navy Leap Frogs
Navy Special Warfare Center
2446 Trident Way
San Diego, CA 92155-5495
(619) 437-2820

J. Foreign Military Teams. The considerations and procedures of this chapter also apply to military teams sanctioned by other countries and approved by AFS-800. The letter of approval for foreign military teams may only be issued by AFS-800. Generally, Flight Standards personnel will observe a private demonstration performance before the approval is issued.

K. DOD-Sanctioned Parachute Teams. DOD has officially sanctioned the U.S. Army Golden Knights and the U.S. Navy Leap Frogs as parachute teams. A team may have more than one unit operating under the designated team name (for example, two Golden Knight teams--the Black Team and the Gold Team--jumping at two different locations).

(1) The DOD-sanctioned military team determines site acceptability, effect of wind conditions, and location of exiting the aircraft. This includes the decision to exit over a spectator area and the determination of authorized passengers onboard the aircraft during performances. DOD accepts the responsibility for these technical judgments with respect to the jump exhibition safety.

(2) An application for a certificate of authorization must be submitted to the jurisdictional FSDO. The application must contain a statement that the military command or service has determined that adequate safety margins exist at the site (from a performers perspective) for the scheduled demonstration by the specific team on a specific date.

L. Non-sanctioned DOD Parachute Teams. Other military jump teams, such as the U.S. Navy's Chuting Stars and the U.S. Air Force Academy's Wings of Blue, are not DOD-sanctioned. They may be allowed to perform the same jumps as civilians with a USPA class D license. Tactical airborne demonstrations must be conducted no closer than the Category II show line.

(1) If an authorization is required under part 105, it may be issued only for military jump operations when all aspects of training, equipment, and procedures are under the military's direct control and responsibility. In the case of an authorization for operations over or into a congested area (§ 105.15), the unit is required to meet the same standards as DOD-sanctioned teams and hold a USPA class D license.

(2) If it is unclear whether a member meets USPA requirements, coordination with the military liaison or AFS-800 may be appropriate. The IIC must determine if the team members have a class D license.

M. Tactical airborne demonstrations are conducted by paratroopers assigned to tactical units and employ standard military equipment and procedures. The drop zone for such demonstrations should be on and beyond the Category II show line. These paratroopers do not require any USPA ratings or need to meet any recency of experience requirements.

N. Additional Information. Any complaints received by the FAA as a result of the aerial demonstration shall be forwarded to the designated military representative for disposition. Any questions involving a military team should be directed to the appropriate team. Enforcement action will be conducted according to current FAA policy.

10. NIGHT AND/OR PYROTECHNIC DEMONSTRATIONS.

A. Authorization. Aerobatic performers may request authorization to conduct aerial demonstrations at night (after official sunset). The demonstrations are typically conducted with pyrotechnic devices attached to the wings. Other demonstrations use numerous landings lights, strobe lights, or smoke. These demonstrations can be conducted no lower than 500 feet and no higher than 5,000 feet AGL. Jet aircraft performers may request a higher ceiling.

B. Requirements. Inspectors can accommodate such requests by ensuring that the following have been accomplished.

(1) The pyrotechnic or light installations are appropriately documented in the aircraft's maintenance records.

(2) The sponsor and the pilot have made the necessary arrangements with local authorities concerning the use of pyrotechnics (hazardous material (HAZMAT) and fire codes).

(3) All aerobatic performers who conduct night and/or pyrotechnic demonstrations after local sunset must have the appropriate authorizations on their FAA Form 8710-7 or TCA Form 26-0307.

11. PARACHUTING - CIVIL AND FOREIGN MILITARY TEAMS. Although many airshow activities may require waivers, parachuting or skydiving demonstration jumps do not require waivers. As provided in part 105, some of these jumps do require a certificate of authorization. An FAA Form 7711-1 is used for authorizations for parachute jumps.

A. Parachutists Not Associated with the USPA. Parachutists who are not members of the USPA and who wish to participate in a demonstration or exhibition jump over or into a congested area, must present satisfactory evidence of the experience, knowledge, and skill equivalent to that required by the USPA. Although the majority of contacts with the parachutists are made by operations inspectors, questions concerning airworthiness or engineering should be referred to AFS-300 and/or ASW-190 for resolution. In some cases, the local USPA area safety and training advisor may be able to answer safety questions regarding the jump and landing area. For assistance in locating a USPA area safety and training advisor in your area, contact USPA at (703) 836-3495.

(1) If the applicant is unable to provide adequate information about the event or jumper's qualifications, inspectors may require a demonstration jump (not over a congested area) before approving an authorization.

(2) The USPA is located at 1440 Duke Street, Alexandria, VA 22314 (phone number (703) 836-3495). This organization has adopted its own safety rules and licensing standards for parachutists, instructors, and jumpmasters. Additionally, the USPA has pledged to implement a policy of self-policing so that conflicts with other airspace users are avoided and a high level of safety is maintained. Toward this goal of assisting the FAA, the USPA has supplied every FSDO with a brochure of its rules and safety programs and has offered assistance any time the FAA has encountered problems with a particular club or has questions regarding parachuting.

B. Safety. Part 105 states rules designed to protect the general public and other users of the national airspace from sport parachuting activities.

(1) When a parachute jump is conducted over or into a congested area, a certificate of authorization is required.

(2) An open-air assembly of persons usually occupies a relatively small area. Therefore, it should not be a problem to avoid these areas during an exit. The primary purpose of an exit limitation over an open-air assembly is to provide a higher level of safety under the remote possibility that a jumper would be unable to deploy one of two state-of-the-art parachutes.

C. Certificate of Authorization. Section 105.15 includes rules applicable to jumps over or into congested areas or open-air assemblies of persons. FAA Form 7711-1 is required for any jump over or into a congested area.

(1) The drift-over provision of § 105.15 permits a jumper to exit an aircraft over areas other than a congested area and, with a fully deployed parachute, drift over a congested area or open-air assembly of persons, and then land in an open area. Under these circumstances a certificate of authorization is not required. However, the drift-over provision does not permit any jump that results in a landing into a congested area or open-air assembly of persons unless the parachutists have obtained a certificate of authorization.

(2) Operations inspectors reviewing applications for authorizations to jump into congested areas or controlled airspace should look for any indication that these jumps involve special stunts or more participants than the aircraft type certificate allows. When in doubt, coordinate with the FSDO airworthiness unit. (Further information about congested areas can be found in volume 2, chapters 102 and 120.)

D. Parachutist's Competence. The competence of parachutists is extremely important when evaluating the suitability of a landing site.

(1) Holders of USPA class D licenses have proven themselves to be highly skilled. Anyone holding a class D license who has actively participated (at least 50 jumps) in the sport within the last 12 months should be competent to participate in any jump where the separation criteria meets or exceeds that established for a level one landing area. (See paragraph 11E.)

(2) Those persons holding a USPA class D license with a current exhibition (PRO) rating have demonstrated the additional skills necessary for exhibition demonstrations in accordance with the separation criteria for a level two landing area. (See paragraph 11E.)

(3) USPA issues the PRO rating with an expiration date that coincides with the expiration date of the holder's USPA membership. USPA members are renewed on the basis of continued demonstration of the original certification requirements. USPA original certification requirements are memberships in USPA, a USPA class D license, and the accomplishment of 10 successive jumps into a 10-meter (32-foot) diameter target area in accordance with the following:

(a) all required jumps are accomplished with a stand-up landing;

(b) the size of the canopy used during the PRO rating qualification determines the smallest canopy allowed in demonstration jumps; and

(c) qualification jumps are witnessed by either a safety and training advisor or by an instructor/examiner and at least two other spectators.

E. Landing Areas. Generally, landing areas fall into one of two categories depending on the demonstrated competency of the parachutists and equipment used.

(1) *Level One Landing Area.* An open area that will accommodate a safe, generally rectangular shaped landing area no smaller than 500 by 500 feet, and up to 750 by 750 feet, with one or two adjacent sides of the rectangle used as the crowdline, is a Level I landing area. The area must also permit jumpers to land no closer than 50 feet from the spectators and to pass over the spectators no lower than 250 feet, including the canopy and all external paraphernalia.

(a) Many open field athletic areas and airport operational areas constitute a Level I landing area.

(b) Minimum competency and recency of experience requirements for Level I landing areas are

at least USPA Class D license and 50 jumps within the previous 12 calendar-months, and 5 jumps within the previous 60 days on the actual canopy, or same make, model, and size of canopy to be used during the demonstration.

(2) *Level Two Landing Area.* An open area that will not accommodate a rectangular shaped landing area no smaller than 500 by 500 feet, but will accommodate a generally round or square safe landing area no smaller than 5,000 square feet per four jumpers under canopy is a Level II landing area.

(a) The area must also permit jumpers to land no closer than 15 feet from the spectators and to pass over the spectators no lower than 50 feet, including the canopy and all external paraphernalia.

(b) An athletic field 150 yards in length by 80 yards in width, or smaller with bleachers, walls, or buildings in excess of 50 feet in height on two or more sides above the landing surface, are defined as stadiums and constitute a Level II landing area.

(c) Minimum competency and recency of experience requirements for Level II landing areas are at least USPA Class D license with PRO Rating and/or members of a DOD-sanctioned parachute demonstration team and 50 jumps within the previous 12 calendar-months, and 5 jumps within the previous 60 days on the actual canopy, or same make, model, and size of canopy to be used during the demonstration. Additionally, jumpers must certify that they will use both a steerable main and reserve ram-air parachute.

(3) Other Landing Area Considerations.

(a) A landing area that exceeds the maximum dimensions of a Level I landing area, and that permits a parachutist to drift over a congested area or open air assembly with a fully deployed and properly functioning parachute (if they are at sufficient altitude to avoid creating a hazard to persons and property on the ground), and that has no other safety concerns would likely not require a Certificate of Authorization as required by § 105.15.

(b) Any parachute jumping demonstration planned in conjunction with a public aviation event such as an airshow conducted in accordance with a Certificate of Waiver or Authorization issued by the FAA will always require a Certificate of Authorization with appropriate special provisions as required by § 105.15 even if the landing area exceeds the maximum dimensions for a Level I area. A parachute jumping demonstration planned in conjunction with a public aviation event is one that takes place any time after the first spectator arrives for the event that day.

F. Alternate Landings Areas. Regardless of the parachutists' experience, there must be identified "runoffs" or escape areas.

G. External Paraphernalia. Parachute teams occasionally use smoke canisters, weighted flags, and other paraphernalia attached to the jumper's boots and to long ropes attached to the jumpers. The attaching ropes are often long enough to cause a hazard to the crowd. The proximity limitations described in paragraph 11E include all attached paraphernalia. Each jump team leader should inspect every jumper to ensure that the pyrotechnics and other paraphernalia are securely attached so inadvertent dropping is prevented. Cutaway acts may not be performed if cutaway equipment will drift into the spectator area.

12. TEMPORARY AEROBATIC PRACTICE AREAS.

A. Additional Waiver. During the airshow season, the FSDO may be called upon to issue a waiver for the establishment of a temporary aerobic practice area.

(1) The waiver may be suggested to the sponsor of a proposed airshow at the same time the application for the airshow waiver is submitted.

(2) This additional waiver must be requested and prepared for the specific purpose of providing a temporary area in which only airshow performers may practice their routines before and during the airshow. In addition, it will provide a safe and approved area for those performers who may be from other states or countries and who need to adapt to the weather and altitude conditions intrinsic to the local area.

(3) Although this will be a separate waiver which becomes effective 2 or 3 days before the airshow, it must be prepared so as to terminate on the same date and time as the airshow waiver.

B. Establishment of Temporary Practice Areas. Some of the parameters the inspector may wish to consider in the establishment of a temporary practice area are as follows:

(1) The actual airshow site may be suitable as a temporary practice area if it is a controlled environment and there will be no conflict with other nonparticipating aircraft. The times of effectivity must be thoroughly coordinated with the pertinent air traffic facilities before approval and issuance of the waiver.

(2) The temporary practice area should be established no more than 20 or 30 miles from the actual airshow site.

(3) All of the coordination required for the establishment of a (regular) aerobic practice area

should also be used in the preparation of the temporary aerobic practice area. (See volume 2, chapter 48.)

(4) The sponsor must control access to the temporary aerobic practice area, and only those persons performing in the airshow should be permitted to use the area.

(5) The physical parameters of the temporary practice area should be large enough to encompass all of the maneuvers that will be performed in the actual airshow.

(6) The responsibility for site selection, coordination, approvals, application, and oversight of the temporary aerobic practice area rests solely with the airshow sponsor/applicant.

C. Established Practice Areas. The International Council of Air Shows (ICAS) will maintain a current listing, prepared by the ICAS staff (phone number (703) 779-8510), that delineates established waived aerobic practice areas which may be used for performer practice with the concurrence of the waiver holder. It is the responsibility of the airshow sponsor to coordinate the use of these established practice areas. If no site is available, it is incumbent upon the airshow sponsor to request a temporary aerobic practice area, or the IIC preparing the airshow waiver may wish to suggest that one be established.

13. REVIEW OF FAA FORM 7711-2. Upon receipt, the application should be reviewed for obvious discrepancies. If discrepancies exist, a meeting with the applicant is helpful in resolving them to mutual satisfaction. The information submitted by the applicant on FAA Form 7711-2 MUST NOT be altered by the FSDO.

A. Items 1 and 2. If the applicant represents an organization, the organization's name should appear in Item 1. The name of the individual and his/her position or authority to represent the organization (i.e., the "responsible person") should appear in Item 2. If the applicant is not representing others, "N/A" should be entered in Item 1 and the applicant's name entered in Item 2. A responsible person is one who has demonstrated to the FAA through his/her practical experience, that they are competent to conduct the event safely.

B. Item 4. The applicant may not know, or may be unsure, which sections of the regulations are involved. A conference with the applicant before acceptance of the application may be necessary. An application for a parachuting operation should state that authorization is requested in accordance with § 105.15.

C. *Item 5.* It is sufficient for the applicant to use the terms airshow, parachute demonstration jump, or air race to describe the events.

D. *Item 6.* Most events are held at, or immediately adjacent to, an airport. An increasing number, however, are held offshore, over water, in the vicinity of state fairgrounds, or at other locations. The applicant should describe the operating area as a cubic or cylindrical cell of airspace; e.g., a rectangle bounded by a runway or other definable geographical reference, a lateral point, and up to a particular altitude above ground level.

(1) For off-airport sites, the boundaries should be described using rivers, roads, or other easily identifiable landmarks.

(2) For an airshow or air race, the applicant must attach current, properly marked charts, maps, drawings, or photographs of the area of operation (not required for parachute demonstration jumps at airshows). The IIC should recommend that the applicant use the 7.5 minute series Topographic Quadrangle Maps, published by the U.S. Geological Survey (scale 1:24,000). Any depiction submitted must include scale indications of the crowd lines, show lines, race courses, the location of the aviation event control point, police dispatch, ambulance, and fire fighting equipment. The applicant may also submit current photographs and scale diagrams to assist the FAA's evaluation of a particular site. Airport master plan charts may be useful for this purpose.

(3) Applicants should note in Item 6 if supplemental information is attached.

(4) For parachute jumps not in conjunction with an airshow, the applicant should submit a current map in sufficient detail and scale to clearly depict both the area over the selected exit point and the intended landing area. However, winds during the event dictate the actual exit point. The intended landing area should be designated, and the applicant must depict areas over which jumpers cannot exit relative to their ratings.

E. *Item 7.* Inspectors can eliminate the need for sponsors to resubmit applications for an additional authorization by advising sponsors to list alternative dates on the initial application. This avoids confusion and reduces the number of applications that must be submitted by the sponsor.

F. *Item 8.* When an application is submitted, the applicant may not know the names of the performers and the aircraft to be used in a show or event. The application may be accepted with a notation in Item 8 that a list will be provided at a later, specified date and time. Once the list has been supplied, last minute

substitutions must show proof of appropriate qualifications to the IIC at the event.

G. *Item 9.* Not every event is sponsored by an organization. Any individual may sponsor an event.

(1) ~~The FAA's concern is not the sponsor's identity but the measures needed to guarantee a safe operation.~~

(2) While the applicant assumes responsibility for the terms of the waiver or authorization, the applicant may not have the operational expertise to ensure compliance with the specified conditions of the waiver or authorization. Under these circumstances, the applicant must designate a person with the necessary background and experience to ensure operational safety as a condition for the issuance of the waiver or authorization.

H. *Item 11.* There is no specific requirement for the use of uniformed police or security guards. The need for policing depends upon several factors.

(1) If fencing is used for crowd control, there may be little need for crowd control personnel. However, if the sponsor intends to merely rope off the primary or secondary spectator areas, it may be necessary to have crowd control personnel.

(2) With respect to crowd control, it is not the FAA's responsibility to control the crowd or to decide who can police a show.

(3) It is the applicant's responsibility to ensure that all reasonable efforts are made to confine spectators to the spectator areas.

(a) *No unauthorized persons are allowed under the aerobatic maneuvering area.* Authorized persons will be kept to a minimum, and the authorization for each person forward of the crowd line must be justified.

(b) If reasonable efforts have been made to keep the area clear and unauthorized persons or vehicles enter the area under the aerobatic maneuvering area, efforts must be made to remove them.

(c) Sponsors, performers, and FAA inspectors shall use good judgment when determining whether it is necessary to halt a show to protect nonparticipants on the ground.

(4) Transition over a road below or adjacent to the aerobatic maneuvering area is the same as egress or ingress over congested areas. If a road runs beneath the aerobatic maneuvering area and is not patrolled, motorists could attempt to park on the shoulders to enjoy the show. In this situation, the applicant should

arrange to have the traffic controlled and directed to a safe location.

(a) There is no requirement for termination of an airshow aerobatic maneuver at a given distance from a road; but, as with a congested area, aerobatic maneuvers shall not be performed over roads unless the road or highway has been closed and no persons are allowed to park along the road.

(b) Roads under the aerobatic maneuvering area(s) will be closed to nonparticipants when the waiver is in effect.

(5) If there are buildings below the airspace where aerobatic maneuvers are performed, the sponsor must make every reasonable effort to evacuate such buildings during the event. If persons re-enter the buildings, efforts should be made to re-evacuate them. Members of the public are not allowed in buildings under the aerobatic maneuvering area.

(6) If a show or act cannot be altered to fit within FAA distance criteria, or if congestion or new development around the proposed site impedes that criteria, the site is probably not acceptable for an airshow. Sites with more than one primary spectator area can be particularly difficult to accommodate.

I. Item 12. Emergency facilities have caused problems for sponsors. As previously noted, the application serves as an all-purpose form and contains items that may or may not be appropriate to emergency facilities. Some applications have been denied because the boxes for physician, ambulance, and fire truck were not filled in. Every airshow sponsor should be encouraged to provide emergency medical service even though this service may not be called into use. Many sponsors prefer to have the local fire department's emergency rescue squad, paramedics, or emergency medical technicians at their show rather than a physician. The following guidelines are usually adequate.

(1) *Physician.* Except for events that are a great distance via a ground vehicle from a hospital or medical clinic, a rescue squad, paramedics, emergency medical technicians, or a first-aid station may substitute for a physician.

(2) *Ambulance.* If a rescue squad is provided, an ambulance should also be provided. If there is a physician in attendance, any vehicle acceptable to the physician for emergency transportation is sufficient. Many communities rely on a sheriff's or local law enforcement officer's vehicle for ambulance service. It would be improper to prohibit use of a similar vehicle to serve as an ambulance for the event.

(3) *Fire Truck.* For the most part, the only reason for having a fire truck at an aviation event is for

the performers' benefit. If the performers are willing to accept a pickup truck with hand-held fire extinguishers, the FAA should not demand that the sponsor provide a fire truck with trained firemen.

(4) *Crash Wagon.* Many event locations do not have crash wagons available. If they are not available, the FAA should not require a sponsor to obtain a crash wagon from a distant facility.

(5) *Other.* The following is an example of how the OTHER block might prove useful. At one event, the sponsor had a helicopter and pilot continually ready for emergency transportation of spectators or performers who might need medical attention during the events. A military trained firefighter and medic were standing by the helicopter with extinguishers in case of an aircraft accident anywhere in the operating area. Describing this OTHER emergency equipment could have relieved the applicant from having to show anything in the preceding blocks.

(6) Aerobatic school activities or aerobatic meets that are not airshows, contests, or races may require a waiver. If these activities are not advertised as aviation events, it may not be necessary for the school or sponsor to provide policing or emergency facilities. (See volume 2, chapter 48.)

J. Item 13. Potential communication contingencies should be entered in this block. Examples of these follow.

(1) Although every aircraft in the event may be equipped with a two-way radio, a visual ground-to-air emergency signal must be provided and described in the application.

(2) If an airport that is the site of an aviation event is served by a scheduled air carrier, arrangements must be made for the arrival and departure of such aircraft. It is usually adequate to schedule a break in the activities to allow for scheduled arrivals and departures. Prior coordination with the air carrier should be completed by the sponsor.

K. Item 14. The FAA must see a schedule of events in order to evaluate the application. For the purpose of reviewing the application, the schedule does not need to be detailed. It should contain at least a general description of the types of events and their sequence in the show.

(1) The applicant must specify a date and time before the show when he or she will provide a schedule of events. The schedule must identify the aircraft and performers in the sequence of appearance. This list becomes a part of the official waiver or authorization package. During the event, the scheduled

order of appearance may change because of weather, mechanical problems or other factors.

(2) Any demonstration added to the schedule requires FAA approval, and should be submitted at the earliest opportunity. Cancellation of events does not

require advance notice. If the sponsor wants to add additional performers after he or she has submitted the final list of participants, pen and ink changes may be approved by the IIC.

TABLE 1

AIRCRAFT/ SHOW LINE CATEGORY	AIRCRAFT CHARACTERISTICS*	STANDARD SHOW LINE DISTANCE FROM THE SPECTATOR AREA
I	More than 245 knots (282 mph)	1,500 feet
II	More than 156 knots but 245 knots or less (181-282 mph)	1,000 feet
	Aerobatic helicopters	1,000 feet
III	156 knots or less (180 mph)	500 feet
III	Any single-engine, normally aspirated or fuel-injected, reciprocating-engine airplane with a maximum certificated gross weight of no more than 2,250 lbs. Aerobatic gliders (sailplanes), ultralights, and gyrocopters	500 feet
III	Nonaerobatic aircraft, rotorcraft agility maneuvers, (any nonaerobatic flyby demonstration)	500 feet
III	BD-5J Microjet	500 feet
N/A	Rocket backpack	250 feet

* These are not operating limitations

14. STANDARD LIMITATIONS. Evaluation of the proposed site determines the actual separation requirements. The following MINIMUM distances and standard limitations apply to *all* aerobatic demonstrations and must be observed.

A. Show lines and Spectator Areas. Pilots performing flight demonstrations must maintain minimum distances from the primary spectator area.

(1) For aerobatic and other flight demonstrations, show lines must be established at prescribed minimum distances from the designated spectator area. These show lines are used as a reference by performing pilots or, in the case of a formation flight, by the formation leader. Flight demonstrations must not cross over these show lines toward the primary spectator area.

(2) For formation flight demonstrations, the formation leader must adjust his/her ground track so that the critical wingman remains beyond the appropriate show line.

(3) For reciprocating-engine powered airplanes and certain other Category III aircraft, these minimum distances are predicated on true airspeed in straight and level flight at 75 percent power at standard temperature and pressure (15°C/sea level) and maximum certified gross weight.

(4) For turbine engine powered airplanes, the distances are based on 85 percent of the maximum continuous powered straight and level flight true airspeed at standard temperature, pressure, and maximum certified gross weight.

(5) With the exception of the BD-5J, any turbine engine powered airplane for which bonafide performance data acceptable to the FAA is not available will be required to perform on or beyond the Category I show line.

(6) Show line categories, speeds, and distances are shown in Table 1 above. These speeds are only for determining assignment to a show line, not maximum performing speeds.

B. Establishment of Show lines. As described in Table 1, three different show lines might be required when all three categories of aircraft are participating at a show site.

(1) The show lines should be established first, rather than establishing the spectator areas and then determining the show lines.

(2) The optimum situation is when prominent show lines such as runway centerlines, treelines or other geographical features are 500, 1,000, or 1,500 feet from the spectators. These distances from the show lines to the spectators for each category of aircraft are the standard; however, under some conditions the distances may be altered. Subparagraphs C and D below define the limitations for these alterations. Consideration for moving show lines are as follows.

(a) If the runway centerline used for a show line is located closer to, or farther from, the spectators than that prescribed for a particular category of aircraft, the show line may be moved. Because a runway is well-defined, at times it is more desirable to use a runway as a show line rather than use a show line that is not well-defined. Only if safety is enhanced by using the well-defined show line, the location of the show line may be altered. This alteration is not to be made as a means of increasing the spectator area or moving the show line closer to the spectators.

(b) Antennas, windsocks, treelines, and other obstacles that are hazards to the performers often necessitate moving a show line; even in these cases, the show line may not be moved any closer than the prescribed altered minimums.

(3) The minimum 500-foot show line for Category III aircraft shall not be waived.

(4) It is vitally important that all show lines be adequately delineated, to include appropriate vertical development. For North American military jet teams, both the Category I and Category III show lines must be discernible at least 2 miles from show center at an altitude of 200 feet.

C. Category I Show lines. The optimum show line distance from the spectator areas for Category I aircraft shall be 1,500 feet or greater (figure 49-14).

(1) If the ONLY well-defined show line is closer than 1,500 feet to a spectator area and it is not possible to move the spectator area, the show line may be approved down to a minimum of 1,200 feet.

(2) When there is a reduction in the distance from the show line to the primary spectator area, a similar reduction shall not be permitted for the

secondary spectator area side of the show line (figures 49-15 and 49-16).

(3) In no case shall there be less than 2,700 feet between the primary and the secondary spectator areas.

(4) Also, it is important for Category I show lines to be well marked.

D. Category II Show lines. The optimum show line distance from spectator areas for Category II aircraft is 1,000 feet or greater.

(1) If the ONLY well defined show line is closer than 1,000 feet to a spectator area and it is not possible to move the spectator area, the show line may be approved down to an absolute minimum of 800 feet (figure 49-17).

(2) When there is a reduction in the distance from the show line to the primary spectator area, a similar reduction shall not be permitted for the secondary spectator area side of the show line.

(3) In no case shall there be less than 1,800 feet between the primary and the secondary spectator areas.

E. Category III Show lines. The show line shall not be closer than 500 feet from the primary or secondary spectator areas (figure 49-18).

(1) The 500-foot show line may also be used for Category I or II aircraft being flown nonaerobically and parallel to the primary and/or secondary spectator area. In this case, the show line must be clearly delineated for high performance aircraft.

(2) A circular arc directed away from the crowd, a pass in review maneuver, may be flown provided the aircraft remain at least 500 feet from the primary and secondary spectator areas.

(3) If there is less than 1,000 feet between the primary and any secondary spectator areas, the site cannot be considered for an airshow waiver.

(4) If there is less than 500 feet between the show line and the spectators, the site cannot be considered for an airshow waiver.

(5) Nonaerobic formation leaders must adjust their ground track so that the critical wingman is not closer to the spectator area than the Category III show line.

F. Aerobic Formation Flight. Formation aerobatics may be performed only if the following conditions are met.

(1) The members of the aerobatic team must have performed together in 10 aerobatic performances over the preceding 12 months; or

(2) The team members must be able to document 30 aerobatic practice sessions as a team over the preceding 12 months in performing aircraft type; and

(3) All persons conducting formation aerobatics must have demonstrated or substantiated their skills and have the "Formation Aerobatics" notation placed on their Statement of Acrobatic Competency, FAA Form 8710-7 or TCA Form 26-0307 as described in paragraph 15E(1).

G. Nonaerobatic Formation Flight. Civil pilots who wish to conduct nonaerobatic formation flight in waived airspace for an airshow must possess a valid industry formation training and evaluation credential that is acceptable to AFS-800.

(1) Any industry credential will suffice for any type airplane. This policy does not apply to closed course air racing, "dog fighting," or skywriters when skywriting.

(2) An appropriately rated instructor or experienced industry formation instructor/proficiency pilot shall be onboard the aircraft when the pilot does not

have previous formation/airshow flying experience and/or an appropriate authorization issued in accordance with an industry training program, or the aircraft may fly in loose "trail" formation.

(3) It is incumbent upon the sponsor to determine compliance with an industry program and/or the airman experience requirements and provisions below.

(4) As such, impromptu formation flying at aviation events is not authorized.

(5) The following conditions must be met.

(a) The aircraft must be equipped with fully functional dual controls and intercom system. If the aircraft requires a second-in-command (SIC), the instructor/proficiency pilot may occupy the jump seat.

(b) The sponsor must be aware of, and consent to, the instructor/proficiency pilot's participation.

(c) The instructor/proficiency pilot must be rated and current in the make, model, and type of aircraft, and be experienced and current in airshow and formation flying.

(d) Aerobatic flight is not to be conducted.

TABLE 2

AIRCRAFT OPERATING CHARACTERISTICS	MINIMUM DISTANCE BETWEEN SPECTATOR AREA AND TAKEOFF/LANDING SURFACE
Category I aircraft conducting an aerobatic maneuver on takeoff*	1,500 feet for takeoff
Category II aircraft conducting an aerobatic maneuver on takeoff*	1,000 feet for takeoff
Category III aircraft conducting an aerobatic maneuver on takeoff*	500 feet for takeoff
Aircraft with V_{ref} in excess of 100 knots	500 feet for takeoff and landing
Aircraft with certificated gross weight in excess of 50,000 lbs.	500 feet for takeoff and landing
Aircraft conducting excessive, nonaerobatic maneuvering on takeoff (comedy acts)	500 feet for takeoff and landing
Aircraft with V_{ref} of 100 knots or less AND certificated gross weight of 50,000 lbs. or less	300 feet for takeoff and landing
All aircraft and ultralights in show have V_{ref} of 60 knots or less AND a certificated gross weight of 2,500 pounds or less	200 feet for takeoff and landing

TABLE 2 - Continued

AIRCRAFT OPERATING CHARACTERISTICS	MINIMUM DISTANCE BETWEEN SPECTATOR AREA AND TAKEOFF/LANDING SURFACE
Sailplanes	200 feet**; 150 feet if angled away 10°**
Performing Rotorcraft	Engine start and shutdown - 200 feet; takeoff and land - 500 feet; hover taxi in between
Rocket Backpack	250 feet for takeoff and landing

*Note 1: See Table 1

*Note 2: If takeoff runway is closer to spectator area than the appropriate show line, aircraft can commence an aerobatic maneuver on takeoff after passing the end of the spectator area or after turning away from the spectator area and crossing the appropriate show line.

**Note 3: See paragraph 14K.

H. Takeoff and Landing Areas.(Table 2)

(1) When the takeoff runway is separated from the primary or secondary spectator areas by less than 500 feet for Category III, 1,000 feet for Category II, and 1,500 feet for Category I aircraft, no aerobatics are permitted until the aircraft passes the end of the spectator area and then only if there is no congested area or spectators below that aircraft. An aerobatic maneuver may be performed after takeoff when the aircraft has turned away from the spectator areas and crossed the appropriate show line. (See figures 49-19 and 49-20 for Category III aircraft example.)

(2) Spectator areas may not be closer than 500 feet to any takeoff and landing runway when the approach speed (V_{ref}) of any aircraft exceeds 100 knots (figure 49-21). Additionally, aircraft that have a certificated gross weight of more than 50,000 pounds shall be required to use a runway that is at least 500 feet from spectators.

NOTE: This distance can be measured to the runway centerline for single aircraft operations conducted on the centerline. If measuring to the centerline, single aircraft must takeoff and land on the centerline. This distance shall be measured to the runway edge for other than in-trail formation operations.

(3) Aircraft with both an approach speed (V_{ref}) of 100 knots or less and a certificated gross weight of 50,000 pounds or less shall be required to use a runway that is at least 300 feet from the spectator area.

(4) The "flying farmer" or similar comedy routines that involve excessive nonaerobatic maneuvering immediately after takeoff or just before landing

must also be separated from the spectator area by at least 500 feet (figure 49-21).

(5) If ALL aircraft in an airshow have approach speeds (V_{ref}) of less than 60 knots, and certificated gross weight of less than 2,500 pounds, and there is no excessive maneuvering during takeoff or landing, spectators may be as close as 200 feet to the takeoff or landing runway (figure 49-22).

(6) These distances shall be measured to the runway centerline, except for formation takeoff/landing operations, which should be measured to the runway edge. Single aircraft operations shall use the runway centerline.

(7) Rotorcraft aerial acts shall begin and terminate the act from a position on the ground at least 500 feet from spectators. Engine start-up/shutdown shall occur at a point no closer than 200 feet from the spectators. Rotorcraft may hover taxi in ground effect between the takeoff/landing areas and the start-up/shutdown area at the speed of a brisk walk.

I. Engine Run Areas. Areas must be at least 100 feet from the spectator area, and areas where rotors are turning must be at least 200 feet from the spectator area. Barriers protected or guarded by wing-walkers, marshallers, AND crowd control monitors that prevent entry by unauthorized personnel into areas where engines are running and/or propellers are turning, must be 50 feet from the spectator area.

J. Rotorcraft Takeoff and Landing Areas. During some airshows, helicopters take passengers for rides or serve as emergency vehicles. The landing and takeoff areas used by these rotorcraft should be enclosed in a

manner that prevents unauthorized persons from entering the landing and takeoff area.

(1) The pads should be located so the aircraft do not pass over spectator areas during takeoff or landing.

(2) The sponsor must establish a flight area and procedures that will not interfere with performers.

(3) Performers must be consulted to ensure that these operations do not pose any hazard to their operations. Generally, helicopter operations should not be permitted during military jet team performances.

(4) Helicopter Emergency Medical Service operations must not endanger spectators, regardless of the emergency nature of those operations.

K. Sailplane Operations. Airshow aerobatic demonstrations with sailplanes are becoming more numerous. Sailplanes are less hazardous than powered aircraft; they do not have engines and propellers nor do they carry flammable liquids. For these reasons, the following criteria apply *only* to sailplane operations.

(1) Sailplanes fall into the Category III aircraft group. Category III show line and performance distances apply.

(2) Because of the need for a tow by either an airplane or a car, taxiways are often used for takeoff. This is often advantageous since it allows the towplane, the towline, and the sailplane to be positioned without affecting the operation of powered aircraft or congesting the active runway. Unless obstructions are present that would make a taxiway takeoff unsafe, it should be permitted with a minimum distance of 200 feet from the primary spectator area (figure 49-23). This distance may be reduced to 150 feet if the takeoff path, beginning at or near the center of the spectator area, is at an angle of at least 10° away from the spectators (figure 49-24).

(3) Landings may be approved on the taxiway used for the takeoff as long as there are no obstructions or adverse wind conditions that would create a hazard to the spectators. If the landing approach requires a low altitude turn over the spectators, landing on a taxiway is not permitted. After landing, the aircraft must come to a full stop at least 50 feet from spectators.

L. Aerobatic Demonstration Area Considerations.

(1) Many terms have been used to describe the area where aerobatics are performed during an airshow, such as aerobatic demonstration areas, flight maneuvering areas, aerobatic boxes, and aerobatic/flyby areas. They all convey approximately the same

meaning. Nonparticipants are not permitted under this area when the waiver is in effect.

(2) A Certificate of Waiver or Authorization, FAA Form 7711-1, issued to an airshow sponsor by the FAA, specifies a geographic area, both lateral and vertical, where demonstrations are authorized. This area could be quite large (e.g., 10 NM radius of an airport from the surface up to 15,000 feet MSL) or rather small (e.g., 2 NM radius up to 3,000 feet MSL), depending on the type of aerial demonstration planned.

(3) In determining where aerobatics will be performed within the geographic area specified on FAA Form 7711-1, the sponsor selects a site which will accommodate all the specific types of aerial demonstrations without derogating safety or creating a hazard to any nonparticipants or spectators. It is imperative that all areas adjacent to the show site containing homes, factories, major highways, travelled thoroughfares, or any occupied vessel, vehicle, or structure, be carefully evaluated before making a final decision for site selection.

(4) The area should be specified on a map, chart, diagram, or other data submitted by the airshow sponsor with the Application for Certificate of Waiver or Authorization for an aerobatic demonstration. Considerable planning by the FAA and show sponsor go into developing appropriate show lines and primary/secondary spectator viewing areas to ensure compliance by the participants and adherence to the Certificate of Waiver or Authorization and the standard and special provisions by the show sponsor.

(5) However, there may be instances when a modification to the aerobatic demonstration area may be necessary for a particular performance, unexpected site problems, weather conditions, geographic conditions, environmental conditions, or any other situation where the modification of the site could enhance safety and event operations. Demonstrations may be authorized outside a previously mutually agreed upon aerobatic demonstration area when the following conditions are met:

(a) The performer is able to comply with all regulations, all special provisions of the waiver, and any/all pilot and aircraft limitations.

NOTE: Section 91.303(a) and (b), Aerobatics over Congested Areas and Open Air Assemblies of Persons, is never waived.

(b) The airshow sponsor complies with all general and special provisions such as halting the demonstration when unauthorized persons, vehicles, or aircraft enter the demonstration area.

(c) The airshow sponsor has received the concurrence of the IIC for the site modification, which should not be unreasonably withheld if conditions (a) and (b) are met.

15. SPECIAL PROVISIONS. Special provisions are conditions, requirements, or limitations necessary to protect nonparticipating persons and property on the surface and other users of the national airspace system. Each Certificate of Waiver or Authorization must include special provisions as determined by the issuing FSDO.

A. Applicability. Many safety provisions are general in nature and are applicable to most aviation events. Other provisions may apply only to certain types of events. Provisions that appear on the waiver or authorization should be restricted to protective measures, controls, or requirements that are not otherwise specified by the regulations. Regulatory requirements that are not waived should not be included as special provisions. Waiver provisions never supersede aircraft airworthiness operating limitations.

B. Ensuring Safety. The special provisions ensure that the event can be conducted without an adverse effect on safety. Every waiver/authorization shall contain special provisions to ensure an equivalent level of safety with the rules that are waived for the nonparticipating public and nonparticipating air traffic.

C. Use of Special Provisions. Some events require extensive and highly detailed special provisions, whereas the special provisions for other events can be less detailed. In addition to variation among events, local conditions may have a significant impact on the necessary special provisions.

(1) Special provisions may pertain to associated protective measures and control requirements that may not be specifically covered by the regulations. In addition, it may be necessary to increase one regulatory minimum in order to authorize safe deviation from another. For example, in order to permit aerobatic flight in Class D airspace, it might be necessary to increase the minimum visibility requirement to 5 miles or some other appropriate value.

(2) When applicable, IIC's should insert the name of the responsible person, found in Item 2 of the application, into the text of the special provisions to indicate the holder of the Certificate of Waiver or Authorization.

(3) The provisions should be typed with as little editorial change as possible onto the Certificate of Waiver or Authorization form or on attached pages. Numbers and language can be inserted or changed to suit each event only when necessary, appropriate, and

in accordance with the guidance in this handbook. Editorial comments enclosed in brackets, [], should not be included on the certificate. When justified by local conditions special provisions can be more restrictive.

D. Examples of Common Special Provisions. Each of the following common special provisions should be included on every Certificate of Waiver or Authorization.

(1) *[Insert name of responsible person]* shall retain sole responsibility for safeguarding persons and property on the surface and shall inform the *[issuing]* FSDO in writing of the person named to ensure safety of the event.

(2) Mr./Ms. *[insert name]* has been determined to be competent and knowledgeable concerning the terms and provisions of this Certificate of Waiver or Authorization and the aviation event governed by it. Mr./Ms. *[insert name]* will be responsible to the FAA for the safe conduct of the event.

(3) *[Insert name of responsible person]* shall ensure that participants are thoroughly briefed on special field rules, manner and order of events, and are available for briefing on the provisions of the waiver(s) or authorization(s) before beginning the activities. No person may participate in any event unless that person has signed a statement stating that they have received a briefing on the provisions of the waiver(s) or authorization(s). Teams may be represented by one performer.

(4) *[Insert name of responsible person]* shall notify the *[insert name]* FAA Flight Service Station of the date, time, place, areas, altitudes, nature of the activity, and duration of the operation and request that a Notice to Airmen (NOTAM) be issued. Such notice shall be accomplished by providing the controlling flight service station (FSS) with a copy of the Certificate of Waiver or Authorization at least 48 hours before the event and no more than 72 hours before the event.

(5) All civil aircraft and pilots participating in the demonstration shall be available for FAA inspection at *[state time and place]*.

(6) For civil aircraft, only required flight crewmembers by type design or those persons required to participate in the demonstration (wingwalkers, stunt persons, actors integral to the performance, and those conducting safety related functions) will be carried on any aircraft engaged in demonstrations authorized by this waiver or authorization.

(7) Failure to comply with any standard or special provision is a violation of the terms of this

Certificate of Waiver or Authorization and justification for cancellation of this Certificate and constitutes a violation of Title 49 of the United States Code (49 U.S.C.) section(s) 44711(a)(2)(B) and/or 44711(a)(5).

(8) The FAA has the authority to cancel or delay any or all acts or events if the safety of persons or property on the ground or in the air are in jeopardy, or there is a violation of the terms of the waiver or authorization.

(9) Persons or aircraft not appearing on the waiver or authorization application and subsequently added to the Certificate of Waiver or Authorization may not participate without specific approval by the FAA.

(10) No demonstrations shall be authorized or scheduled when a suspension of airport traffic or diversion of other aircraft traffic would cause a hardship to schedule air carrier operations.

(11) The distance from clouds requirements of 14 CFR § 91.155 are not waived.

(12) Regardless of any altitude restriction imposed by the terms and conditions of the Certificate of Waiver, civilian flying performers who do not hold a FAA Form 8710-7 or TCA Form 26-0307 with a Level 1 altitude authorization may conduct one photo pass no closer than the Category III showline. Ingress/egress shall be no closer than 500 feet laterally to the ends of the primary spectator area. Also, civilian performers who do not hold a FAA Form 8710-7 with a Level 1 altitude authorization may conduct a photo pass no lower than 50 feet AGL when operating on or beyond the Category III showline. The single photo pass must generally be conducted in steady state, level pitch attitude, non-maneuvering flight not to exceed 75° of bank. The 50 foot AGL, aircraft attitude, and steady state maneuvering restrictions do not apply to military performers, and/or civilian performers who hold a valid FAA Form 8710-7 or TCA Form 26-0307 with Level 1 authorization.

E. Examples of Low Level Aerobatics Special Provisions. As appropriate, include the applicable special provisions with the provisions in paragraph 15D of this section when aerobatics will be performed contrary to § 91.303(a) through (f).

(1) All civil pilots who perform aerobatics must possess a valid FAA Form 8710-7 or TCA, Form 26-0307. All limitations on the form will be adhered to including altitude restriction for the entire performance. Upon request of the FAA, they must show evidence of performing or practicing their performance(s) within the previous 90 days. Pilots who wish to conduct nonaerobatic formation flight at

an airshow must possess a valid industry formation training and evaluation credential acceptable to the FAA.

(2) For the purpose of this event, the definition of aerobatic flight contained in § 91.303 is waived. The following guidelines apply in determining what maneuvers are considered aerobatic.

(a) An intentional maneuver in which the aircraft is in sustained inverted flight, or is rolled from upright to inverted or from inverted to upright is considered aerobatic flight.

(b) The following aircraft attitudes will be considered aerobatic flight:

i. For civil turbojet/turboprop powered (primary power unit) airplanes, when the pitch angle exceeds a positive or negative 60° angle from the horizon, and/or when the bank angle diverges from level flight in excess of 60°.

ii. For all other aircraft, when the pitch angle exceeds a positive or negative 90° angle from the horizon, and/or when the bank diverges from level flight in excess of 90°.

(c) All standard airshow aerobatic maneuvers such as slow rolls, snap rolls, loops, Immelmans, Cuban eights, spins, hammerhead turns, etc., are considered aerobatic flight.

(d) Steeply banked (90° or less), level, climbing, or descending turns necessary for maneuvering back to the aerobatic area and/or show center between aerobatic maneuvers are not considered to be aerobatic flight.

(e) For civilian performers that have FAA approved maneuvers packages, and for performers in North American Military Units that have FAA accepted maneuvers packages, positioning turns are not considered airshow aerobatic maneuvers regardless of the angle of bank or pitch attitude, but only as necessary to complete the turn.

(f) Maneuvers such as steep turns in air racing are not considered aerobatic flight.

(3) A control point shall be established where the certificate holder or representative shall direct the demonstration. This person shall be continuously available to the FAA and is the person designated as responsible for the overall safety of the event.

(4) A show line or show lines (man-made or natural) clearly visible to the performers/pilots shall be provided to assist them in compliance with the approved distances from the spectator area(s). The show line(s) will include a visible show center marker.

(5) Except when authorized during takeoff or landing, aircraft that operate at speeds of 156 knots or less and certain other Category III aircraft shall perform no closer than 500 feet horizontally from the spectator area[s]. The show line[s] for these aircraft [is/are] defined on attachment #[insert number]. Notwithstanding the speed capability of BD-5J airplanes, they may perform aerobically no closer than 500 feet horizontally from the spectator area[s]. (The attachment should distinctly depict and describe the show line(s) and show center.) Any single-engine, normally aspirated, fuel-injected, reciprocating-engine airplane with a maximum certificated gross weight of no more than 2,250 lbs. is also a Category III aircraft.

(6) Except when authorized during takeoff or landing, aircraft that operate at speeds of more than 156 knots but 245 knots or less shall perform aerobatic maneuvers no closer than 1,000 feet horizontally from a single spectator area. If two spectator areas are used, the show line may be no less than 800 feet from the primary spectator area and no less than 1,000 feet from the secondary spectator area. The show lines for these aircraft [is/are] defined on attachment #[insert number]. (The attachment should distinctly depict and describe the show line(s) and show center and specify the actual distances approved).

(7) Except when authorized during takeoff or landing, aircraft that operate at speeds of more than 245 knots shall perform aerobatic maneuvers no closer than 1,500 feet horizontally from a single spectator area. If two spectator areas are used, the show line may be no less than 1,200 feet from the primary spectator area, and no less than 1,500 feet from the secondary spectator area. The show line[s] for these aircraft is/are defined on attachment #[insert number]. (The attachment should distinctly depict and describe the show line(s) and show center and specify the actual distances approved).

NOTE: For reciprocating-engine powered airplanes, these distances are predicated on true airspeed in straight and level flight at 75 percent power at standard temperature and pressure (15°C/sea level) and maximum certificated gross weight. For turbine engine powered airplanes, the distances are based on 85 percent of the maximum continuous powered straight and level flight true airspeed at standard temperature, pressure, and maximum certificated gross weight. Any turbine engine powered airplane for which bonafide performance data acceptable to the FAA is not available will be required to perform on or beyond the Category I show line.

(8) Nonaerobatic fly-bys may be conducted no closer than 500 feet horizontally from the spectator areas for all aircraft.

(9) Supersonic and/or trans-sonic speeds are prohibited.

NOTE: This special provision should only be included if an aircraft scheduled in the event is capable of operating at supersonic and trans-sonic speed.

(10) Adequate communication capability (electronic and visual) must be provided to maintain a safe operation, to control spectators, and to advise participants that the aerial demonstration has been halted or canceled.

(11) A crowd line consisting of a physical barrier and/or adequate policing shall be provided to confine the spectators to designated areas. The spectator areas shall have well defined lateral boundaries.

(12) The demonstration shall be halted for any reason that is in the interest of safety. It shall also be halted when unauthorized aircraft enter the airshow operations area, and/or when unauthorized persons or vehicles enter the area underlying the aerobatic maneuvering area. Only the minimum number of authorized persons necessary to support operations will be authorized in the operating areas. The holder of the Certificate of Waiver or Authorization assumes responsibility for persons who enter the operations area.

(13) Aircraft engines shall not be started and aircraft shall not be taxied in designated spectator areas or static display areas unless adequate measures are taken to protect the spectators. Areas where engines and propellers will be turning must be at least 100 feet from the spectator area and areas where rotors are turning must be at least 200 feet from the spectator area. Areas where engines and propellers are turning that are protected by a physical barrier or guarded by wing-walkers, marshallers, AND crowd control monitors that will prevent entry by unauthorized personnel, must be at least 50 feet from the spectator area.

(14) Flight demonstrations shall not be conducted unless the ceiling is at least 1,500 feet, and the visibility is at least 3 statute miles at the time of the demonstration.

(15) The FAA monitor may adjust the minimum ceiling and visibility requirements at his/her discretion, but no less than 1,000 feet and 3 statute miles if:

(a) Except for North American military performers, aerobatic maneuvers are conducted by

Category III aircraft only within an operations area having a diameter of no more than 2 statute miles; and

(b) Originally scheduled aerobatic maneuvers are not modified or conducted in close proximity to the surface as a result of the reduced weather conditions.

(16) Aircraft maneuvers may not direct energy toward any spectator area. Certain related maneuvers and procedures, however, may be authorized as outlined below.

(a) Approved maneuvers that are completed prior to reaching a point that the rollout and trajectory of the aircraft or the scatter pattern would not endanger the spectators if a catastrophic failure were to occur. Approved maneuvers are maneuvers that have been approved by AFS-800 for a specific performer and aircraft. Upon request from the FAA, performers are required to present evidence of the approval.

(b) For the U.S. Air Force Thunderbirds and/or U.S. Navy Blue Angels, approved maneuvers may include level or climbing (normal rate) nonaerobatic flight over designated spectator areas generally from front to back or back to front; however, in no case shall the altitude of the aircraft be less than 500 feet AGL over primary spectator area. All other performers must be at or above 1,000 feet AGL over primary spectator areas unless they hold approval for the maneuver from AFS-800.

(c) Maneuvers on an oblique line that pass 500, 1,000, or 1,500 feet to either side of a spectator area as appropriate to the category of aircraft being flown during oblique aerobatic maneuvers.

(17) An arrival demonstration is not authorized unless an advance member of the demonstration team has been briefed on the show line and pertinent special provisions of the waiver. This information must be relayed to the team leader before the arrival demonstration.

(18) The following facilities shall be provided and readily available at the demonstration site. *[List the emergency and medical equipment or personnel that the sponsor and the IIC have agreed are needed, and include an emergency plan.]*

(19) To alert nonparticipating aircraft, a closed field signal in the form of a large "X," which is colored aviation yellow and readily visible from 3,000 feet above the surface, must be displayed on a prominent part of the airport when the aerial demonstration is in progress. *[This closed field signal is necessary at most uncontrolled airports and airports which have only a non-Federal control tower, but is usually not required at airports which have a Federal control tower.]*

(20) *[Insert name of responsible person]* shall ensure that roads and buildings under the specified aerobatic maneuvering area are devoid of vehicular and pedestrian traffic and/or persons.

(21) Spectator areas may not be closer than 500 feet from any takeoff and landing runway when the approach speed of any aircraft exceeds 100 knots and/or for any aircraft that has a certificated gross weight of more than 50,000. Aircraft with both an approach speed of 100 knots or less and a certificated gross weight of 50,000 pounds or less shall be required to use a runway that is at least 300 feet from the spectator area. If ALL aircraft and ultralights in an airshow have approach speeds of less than 60 knots, and certificated gross weight of less than 2,500 pounds, and there is no excessive maneuvering during takeoff or landing, spectators may be as close as 200 feet to the takeoff or landing runway. The "flying farmer" or similar comedy routines that involve excessive nonaerobatic maneuvering immediately after takeoff or just before landing must also be separated from the spectator area by at least 500 feet. These distances can be measured to the runway centerline for single aircraft operations, in which case the aircraft are expected to operate on the runway centerline. For formation takeoffs/landings, this distance shall be measured to the runway edge.

(22) Aircraft equipped with operable ejection seats or jettisoned tanks must be identified as such to the event sponsor and on-site crash rescue services.

F. Examples of Helicopter Special Provisions. As appropriate, include the applicable special provisions with the provisions in paragraph 15D of this section for performing helicopter activities.

(1) Helicopters may perform aerobatic maneuvers no closer than 1,000 feet horizontally from a spectator area. These maneuvers may include a 90° pitch down, a split "S," a loop, and a barrel roll. Civil performers proposing to use these maneuvers in an airshow must produce appropriate written authorization by AFS-800.

(2) Helicopters performing aerobatic maneuvers shall have a valid and current special airworthiness certificate issued in the Experimental Category for the purpose of exhibition. Nothing contained in these special provisions shall be contrary to any operating or special limitation issued as a part of that special airworthiness certificate.

(3) Helicopters may perform agility maneuvers no closer than 500 feet horizontally from a spectator area. These maneuvers may include abrupt pedal turns, sideward and rearward flight maneuvers, out-of-ground effect hovering, continued operation in the

avoid area of the height velocity diagram, and turns not exceeding 90° of bank. All helicopter performances must terminate no closer than 500 feet from the spectator area.

(4) Helicopter takeoff and landing areas used for providing helicopter rides to the crowd must be protected in a manner that will prevent unauthorized persons from entering the helipad area. The pads should be at a location that will prevent the helicopter from passing over spectators during takeoff or landing.

G. Examples of Night Event Special Provisions. As appropriate, include the applicable special provisions in addition to the special provisions in paragraph 15D of this section for events conducted after local sunset.

(1) Aerobatic demonstrations at night shall be confined to 1 NM on either side of the show center along a well-defined, lighted show line.

(2) Aerobatic demonstrations at night shall be confined to altitudes above 500 feet AGL and below 5,000 feet AGL after official sunset.

(3) The minimum weather conditions at night require a cloud base no lower than 2,500 feet and 3 statute miles visibility.

(4) Aircraft position lights must be operating except while pyrotechnics on the aircraft are illuminated.

(5) When pyrotechnics are illuminated, operations over persons are prohibited at any altitude.

H. Special Provisions for Parachute Jumps. As appropriate, include the applicable special provisions with special provisions in paragraph 15D for parachute jumps, including tactical airborne demonstrations, that require an authorization under § 105.15. Restrictions in this section are not appropriate for parachute jumping operations not requiring an authorization under § 105.15.

(1) Except for tactical airborne demonstrations, all jumpers shall have a record of at least 50 parachute jumps in the past 12 calendar-months, 5 of which must have been made in the last 60 days.

(2) Each civilian jumper shall not exceed the manufacturer's maximum suspended weight for the parachute to be utilized in the demonstration.

(3) The holder of this Certificate of Waiver or Authorization must position at least one person on the ground in the landing area to perform ground control duties. Ground control must have and utilize a means of constant communication with the jump aircraft. Direct two-way radio shall be the primary means of communication. In the event two-way radio communi-

cation is lost, a visual means of communication must be available that is capable of being identified and understood by the jumpers from the jump aircraft, and that will clearly indicate to jump or not to jump.

(4) Procedures shall be established and used by the holder of this Certificate of Waiver or Authorization to control spectators and keep them out of the landing area.

(5) Except for tactical airborne demonstrations, minimum competency and recency of experience requirements for Level I landing areas are at least USPA Class D license with 50 jumps within the previous 12 calendar-months, and 5 jumps within the previous 60 days on the actual canopy, or same make, model, and size of canopy to be used during the demonstration. The jumpers may exit over an open area and drift into a Level I landing area within a congested area and must land no closer than 50 feet from any spectators and to pass over any spectators no lower than 250 feet, including the canopy and all external paraphernalia.

(6) Except for tactical airborne demonstrations, minimum competency and recency of experience requirements for Level II landing areas are at least USPA Class D license with PRO rating with 50 jumps within the previous 12 calendar-months, and 5 jumps within the previous 60 days on the actual canopy, or same make, model, and size of canopy to be used during the demonstration. Additionally, jumpers must certify that they will use both a steerable main and reserve ram-air parachute. The jumpers may exit over an open area and drift into a Level II landing area within a congested area and must land no closer than 15 feet from any spectators and pass over any spectators no lower than 50 feet, including the canopy and all external paraphernalia.

(7) The holder of this Certificate of Waiver or Authorization is responsible for the overall safe execution of the jump exhibition. The final determination of site acceptability, landing area, wind conditions, and location of where to exit the jump aircraft (in accordance with the aforementioned special provisions) will be made by the team leader.

(8) With the exception of members of DOD-sanctioned teams, under no circumstances may a parachutist exit an aircraft directly over a spectator area or open air assembly of people.

(9) The parachute jumps shall be from [insert altitude] feet MSL and below.

(10) With the exception of DOD-sanctioned teams and tactical airborne demonstrations, parachutists shall deploy their parachutes at an altitude of not less than 2,000 feet AGL.

(11) The decision to integrate Canopy Relative Work (CRW) into the parachute demonstration will be the responsibility of the team leader. The team leader will determine the effects of wind speed, direction, and turbulence when determining whether CRW can be conducted safely. This includes the decision to fly a completed formation over a spectator area or open air assembly of people. With the exception of DOD-sanctioned teams, CRW formations comprised of all USPA PRO-rated jumpers and any two jumper formation, CRW formations will not be flown below 1000 feet AGL for Level II landing areas, and 500 feet AGL for Level I landing areas.

(12) With the exception of DOD-sanctioned teams, no hook turns will be initiated below 200 feet AGL.

NOTE: A hook turn is a maneuver in any maneuver sequence that causes the canopy to roll at an angle in excess of 45° from vertical and/or to pitch up or down at an angle in excess of 45° from horizontal while executing a turn in excess of 60°.

(13) With the exception of DOD-sanctioned teams, intentional cutaway performances will not be initiated below 3,000 feet AGL. Intentional cutaway performances will not be initiated from any altitude by anyone if wind conditions would cause the cutaway equipment to drift into the spectator area.

(14) The team leader or jumpmaster is responsible for inspecting all parachutists' equipment and clothing, to include additional paraphernalia such as ropes, flags, and/or smoke/pyrotechnic devices for proper configuration and security prior to boarding the jump aircraft, and again just prior to exiting the jump aircraft.

(15) All jumpers using additional paraphernalia such as ropes, flags, and/or smoke/pyrotechnic devices shall have at least one jump utilizing an identical device(s) prior to accomplishing the demonstration.

(16) The holder of the Certificate of Waiver or Authorization shall brief the PIC of the jump aircraft and the jumpers on the terms of this Certificate of Waiver or Authorization.

(17) [Insert name of responsible person] shall notify the [insert name] FAA Flight Service Station of the date, time, place, areas, altitudes, nature of the activity, and duration of the operation and request that a NOTAM be issued. Such notice shall be accomplished by providing the controlling FSS with a copy of the Certificate of Waiver or Authorization in accordance with § 105.23.

(18) The flight crew of the jump aircraft shall coordinate the operation with, and monitor, [insert name of ATC facility] on [insert frequency] or as assigned by ATC, throughout the demonstration.

(19) The flight crew shall notify [insert name of ATC facility] (or as assigned by ATC) 10 and 5 minutes prior to the jumpers exiting the aircraft, when all jumpers are away, and when the last jumper is on the ground.

(20) The jump aircraft shall be equipped with a functioning 4096 Code Transponder with Mode "C" and shall use the transponder on the appropriate code (or as assigned by ATC) throughout the demonstration.

(21) The PIC of a civil jump aircraft is responsible for complying with all operational requirements of part 91 to include, but not limited to, operational limitations for flight with the door(s) open or removed and all gross weight and center of gravity limitations. The removal or installation of equipment in a civil aircraft or the increase in passenger loads, other than already approved for that aircraft, requires FAA approval such as TCDS, supplemental TCDS, or FAA field approval.

(22) Aircraft on the ground shall not operate engines, propellers, and rotors closer than 1,000 feet to touchdown area when jumpers are airborne.

(23) Tactical airborne demonstrations must be conducted on or beyond the Category II show line.

(24) In the event that a performance involves aircraft operating in the vicinity of parachutists, whether in free-fall or under deployed canopies, all pilots and the jumpermaster or team leader of the parachutists involved shall be present at the airshow briefing. [insert name] shall insure that each participant understands the details of the performance, which shall include, at the minimum, the following information:

- (a) The number of parachutists performing.
- (b) The types of and/or colors of parachutes.
- (c) The exit altitude and deployment altitude.
- (d) The planned flight path prior to exit, as well as, the descent area of the jump aircraft.
- (e) The number, type and color of the aircraft involved.
- (f) Procedures to be used in the event of an unexpected occurrence.

I. Examples of Balloon Event Special Provisions.

As appropriate, include the applicable special provisions with the special provisions in paragraph 15D of this section for events that include balloon events.

(1) Section 91.119(b) and (c) are waived to the extent necessary to allow participating balloons to compete in *[insert the name of the balloon event here]* under the terms and conditions set forth in the FAA approved procedures section of the Organized Manned Balloon Competition Manual.

(2) The Organized Manned Balloon Competition Manual is incorporated into this Certificate of Waiver or Authorization and becomes a special provision thereof. Any action contrary to the terms, controls, procedures, and conditions pertaining to safety set forth in the FAA approved procedures is grounds for cancellation of this waiver.

(3) *[Insert name of responsible person]* shall ensure that each participating event crewmember has read and understands the FAA approved procedures section of the *[insert name of balloon manual]* and the special provisions of this waiver.

J. Examples of Air Race Special Provisions. As appropriate, include the applicable special provisions in addition to the special provisions in paragraph 15D of this section for events that include air races.

(1) The race course is depicted and described on attachment #*[insert number]* of this Certificate of Waiver or Authorization.

(2) Racing flight operations are not authorized when the reported (or observed) flight visibility is less than 3 statute miles. *[This value should be adjusted upward for racing speeds above 300 knots.]*

(3) In the event of an accident considered to be the result of a course deficiency or racing procedures, flight operations will be canceled until the deficiency has been corrected by the person designated responsible for the overall safety of the event, and the correction accepted by the IIC.

(4) All flights conducted less than *[insert number]* feet AGL shall be conducted *[insert number]* feet from the show line located on the *[insert direction]* edge of runway #*[insert runway number]* and within *[insert number]* feet horizontally of the depicted course.

(5) The pilot of any race aircraft operating outside the course, as described in provision #*[insert number]* above, shall be immediately disqualified by the certificate holder and directed to vacate the race course.

(6) Maneuvers such as steep turns in air racing are not considered aerobatic flight.

(7) A control point shall be established where the certificate holder or representative shall direct the demonstration. This person shall be continuously available to the FAA and is the person designated as responsible for the overall safety of the event.

(8) Racing flight operations may be no closer than 500 feet horizontally from the primary spectator areas for all aircraft.

(9) A crowd line consisting of a physical barrier and/or adequate policing shall be provided to confine the spectators to designated areas. The spectator areas shall have well defined lateral boundaries.

(10) The demonstration shall be halted for any reason that is in the interest of safety. It shall also be halted when unauthorized aircraft enter the airshow operations area, and/or when unauthorized persons or vehicles enter the area underlying the racing flight operations area. Only the minimum number of authorized persons necessary to support operations will be authorized in the operating areas. The holder of the Certificate of Waiver or Authorization assumes responsibility for persons who enter the operations area.

(11) The following facilities shall be provided and readily available at the demonstration site. *[List the emergency and medical equipment or personnel that the sponsor and the IIC have agreed are needed, and include an emergency plan.]*

(12) To alert nonparticipating aircraft, a closed field signal in the form of a large "X," which is colored aviation yellow and readily visible from 3,000 feet above the surface, must be displayed on a prominent part of the airport when the racing flight operations are in progress. *[This closed field signal is necessary at most uncontrolled airports and airports which have only a non-Federal control tower, but is usually not required at airports which have a Federal control tower.]*

(13) *[Insert name of responsible person]* shall ensure that roads and buildings under the specified racing flight operations area are devoid of vehicular and pedestrian traffic and/or persons.

K. Examples of Ground-Based Pyrotechnics Special Provisions. As appropriate, in addition to the applicable special provisions in paragraph 15D of this section, include the following special provisions/restrictions for events that will use ground-based pyrotechnics, if the ground-based pyrotechnics will be installed and/or detonated anywhere on the airport surface.

(1) Ground-based pyrotechnics shall not be placed on and/or detonated in any safety area(s) defined by 14 CFR part 139, § 139.309, and described in the airport certification manual if any certificated air carrier or commercial operator will be conducting revenue operations on the adjacent airport movement area(s) during the time period beginning when ground-based pyrotechnics are installed and ending when the ground-based pyrotechnics have been expended and/or safely removed and secured.

(2) For all other public use airports, ground-based pyrotechnics shall not be placed on and/or detonated in any safety area(s) as defined in AC 150/5300-13, Airport Design, Tables 3-1, 3-2, or 3-3, as appropriate, if any nonparticipating aircraft will be operating on the adjacent airport movement area(s) during the time period beginning when ground-based pyrotechnics are installed and ending when the ground-based pyrotechnics have been expended and/or safely removed and secured.

(3) If nonparticipating aircraft operations will be restricted to provide adequate separation from ground-based pyrotechnics to assure the safety of the aircraft relative to the use of ground-based pyrotechnics, the restricted movement plan must be approved by the airport manager and/or other appropriate official(s).

(4) The placement and planned use of ground-based pyrotechnics must be thoroughly reviewed in the event participants' briefing as required by special provision [enter number].

(5) The placement and planned use of ground-based pyrotechnics must be approved by the airport manager and/or other appropriate official(s).

NOTE: Consult with airport manager on location of airport safety areas.

L. Examples of Agricultural Aircraft Demonstration Special Provisions. As appropriate, in addition to the applicable special provisions in paragraph 15D, include the following special provisions/restrictions for events that will use agricultural aircraft demonstrations.

(1) No pilot shall perform any agricultural aircraft demonstration unless they comply with the provisions of 14 CFR § 137.53(a) and (b).

(2) The aircraft must meet the provisions of § 137.53(c).

(3) All pull-up and turn-around maneuvers shall be initiated in a direction other than toward the primary spectator area.

(4) Only water will be dispensed. The demonstration shall be conducted on or beyond the Category III showline and in a manner as to prevent the dispensed water from drifting into the primary spectator area.

(5) Aircraft and equipment used for the agricultural aircraft demonstration shall be thoroughly cleansed prior to the flight demonstration and/or public static display so as to be free of any poisons or other chemicals.

(6) Aircraft used for conducting agricultural aircraft demonstrations shall not conduct maneuvers that exceed 90 degrees of pitch or bank, or as limited by the appropriate aircraft flight manual.

[PAGES 49-35 THRU 49-44 RESERVED]

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in part 91 and FAA policies and qualification as an ASI (operations).

(1) The inspector assigned this task is also responsible for the surveillance of the aviation event. (See volume 2, chapter 50.)

(2) The inspector assigned this task and the subsequent surveillance **MUST** have completed on-the-job training (OJT) and participated in the issuance of a certificate of waiver and the surveillance of three aviation events with an inspector qualified in this task.

(3) For aviation events where a military jet aerobatic demonstration team performs, the inspector must have satisfactorily completed OJT training (including participation in the feasibility study, the preseason evaluation meeting, waiver preparation, and airshow surveillance) at an event that includes a military jet aerobatic team.

B. Coordination. This task requires prior coordination with the appropriate air traffic facility and the airworthiness unit.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, 91, 103, 105, 133, and 139.
- AC 91-45, Waivers: Aviation Events
- AC 103-7, The Ultralight Vehicle
- AC 105-2, Sport Parachute Jumping

B. Forms.

- FAA Form 7711-1, Certificate of Waiver or Authorization (figure 49-25)
- FAA Form 7711-2, Certificate of Waiver or Authorization Application (figure 49-3)
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet
- FAA Form 8710-7, Statement of Acrobatic Competency (figure 49-4)
- DD Form 2535, Request for Military Aerial Support (figure 49-13)
- Transport Canada Aviation (TCA) Form 26-0307, Statement of Aerobatic Competency

C. Job Aids.

- Sample letters and figures

3. GENERAL PROCEDURES.

A. Determine if a Waiver or Authorization is Required. If the event cannot take place in compliance with the regulations, a waiver is required.

(1) If a waiver or authorization is not required, no further action is required with this task. However, DD Form 2535, section V, should be completed and signed if requested by an event sponsor. These forms are required for vehicle and static displays as well as for military flight demonstrations.

(2) If a waiver or authorization is required, brief the applicant on preparing FAA Form 7711-2.

B. PTRS.

- Open PTRS File.

C. Brief Applicant.

(1) Advise applicant on the procedures to prepare FAA Form 7711-2.

(2) Advise the applicant on the procedures to obtain AC 91-45, AC 103-7 (if applicable), and AC 105-2.

(3) Provide applicant with FAA Form 7711-2 (figure 49-3).

4. ADDITIONAL PROCEDURES FOR MILITARY APPLICANTS. In addition to the procedures in section 2, paragraph 3 above and paragraph 5 following, conduct the following procedures for military applicants.

A. Determine if a Feasibility Study is Required. A feasibility study by the FAA is required only when a DOD aerial demonstration team (Thunderbirds or Blue Angels) is participating in an event that requires a Certificate of Waiver or Authorization.

B. Conduct Feasibility Study.

(1) Determine if an on-site inspection is required. An on-site inspection is required when:

- (a) the inspector is not familiar with the area of the scheduled event;
- (b) there has not been a show there before; and/or

(c) there may be new construction or other unique environmental changes near the site.

(2) If an on-site inspection is required, conduct the inspection with the show sponsor.

~~(3) The inspector shall determine:~~

(a) if the operating area is large enough to contain the aerobatic maneuvers;

(b) whether proposed egress and ingress routes adversely impact safety; and

(c) whether a waiver of § 91.119(b) and (c) is necessary.

C. Complete Applicable Section of DD Form 2535, Request for Military Aerial Support. Fill in the appropriate FAA blocks on the form, with special emphasis on Block 17 (figure 49-13), and sign the form. Retain a copy of DD Form 2535 for the office file. Return the original to the show sponsor.

D. Preseason Evaluation Meeting. Attend the preseason evaluation meeting for those events at which the U.S. Air Force Thunderbirds or the U.S. Navy Blue Angels participate. At this meeting the inspector should discuss the following:

(1) proposed special provisions of the Certificate of Waiver or Authorization;

(2) safety concerns unique to the site;

(3) past events, if appropriate;

(4) whether a waiver to § 91.119(b) or (c) is necessary; and

(5) proposed egress and ingress routes that will require FAA approval.

5. GENERAL PROCEDURES CONTINUED.

A. Evaluate FAA Form 7711-2. Using the information provided by the applicant and the background in section 1, review FAA Form 7711-2 for all pertinent information and supporting documents for the proposed aviation event. Accept strikeovers that are minor in nature and initialed by the applicant. Items 9 through 14 apply to airshow and air race waiver requests only.

(1) *Items 1 and 2, Name of Organization/Name of Responsible Person.* Ensure that the applicant has indicated the name of the organization or the individual applying and the name of a person responsible.

(2) *Item 3, Permanent Mailing Address.* Ensure that the applicant indicates the permanent mailing address of the organization or the individual named in Item 1.

(3) *Item 4, Section and Number to be Waived.* Ensure that the applicant has listed all sections of the regulations to be waived.

(4) *Item 5, Description of Proposed Operation.* Determine if the applicant has correctly indicated the type of aviation event.

(5) *Item 6, Area of Operation.* Ensure that the applicant has listed the specific locations and altitudes of the aerial demonstrations.

(6) *Item 7, Beginning Date and Hour and Ending Date and Hour.* Check for a beginning date and time, and an ending date and time for the aviation event.

(7) *Item 8, Aircraft and Pilots.* Check for aircraft make and model, pilot names, certificate numbers and ratings, and full home addresses. Ensure that parachutist names, license class, and addresses are included. Item 8 may be accepted with a statement, "A list containing aircraft and pilot information (and/or parachutist information) will be furnished on [applicant enters a specific date and time]".

(8) *Items 9 and 10, Sponsorship.* Ensure that the applicant has indicated the sponsor (organization or individual) of the aviation event and the sponsor's address.

(9) *Item 11, Policing.* Ensure that the applicant has described provisions for policing the event.

(10) *Item 12, Emergency Facilities.* Ensure that the applicant marked all items that will be available at the time and place of the event.

(11) *Item 13, Air Traffic Control.* Ensure that the applicant has described the method of controlling air traffic, including the arrival and departure of aircraft, and has coordinated with the appropriate FAA ATC.

(12) *Item 14, Schedule of Events.* Ensure that the applicant has listed all events and dates and times.

(13) *Item 15, Certification.* Ensure that the applicant has signed and dated the application.

B. Application Incomplete or Inaccurate. If the application is incomplete or inaccurate, complete the FAA Action block on FAA Form 7711-2 by marking "Disapproved." Write the reason for disapproval in the Remarks section. Return the application to the applicant.

C. Application Complete. If all pertinent information and supporting documents have been submitted with the application and the application is complete and correct, evaluate the proposed operation.

D. Evaluate Proposed Operation. Use the application information and the items listed below to determine if the proposed operation can be accomplished without an adverse effect on safety:

(1) Review, if applicable, previous certificates of waiver or authorization issued for aviation events at the same location.

(2) Coordinate the use of controlled airspace with the appropriate air traffic facility as soon as possible. Include any limitations or special conditions considered necessary by the Air Traffic Service as part of the Certificate of Waiver or Authorization.

(3) Using the list of participating aircraft, verify that the required documents have been completed by the airworthiness unit.

(4) Using the list of participating aircraft and table 1 in section 1, determine the required showline distance.

(5) Accompanied by the applicant, conduct an on-site visit to sites used for the first time and to sites unfamiliar to the inspector.

(a) Clarify or confirm information submitted with the application.

(b) Verify the distances and the location of the showline.

(6) Encourage the sponsor to include the following cautionary statement in the NOTAM issued for the airshow, advising of the congestion around the airshow site and the absolute necessity of compliance with the regulations at all times, including when cleared for a low approach/flyby.

All arriving and departing aircraft are cautioned that the airspace in and around _____ airport will be very congested before and after the airshow scheduled for _____, between the hours of _____ and _____. In addition, aircraft that request a low approach upon arrival or departure are reminded that any low approach must be conducted within the regulations concerning speed, altitude, aerobatic maneuvers, and any other regulatory requirements. Low approaches/flybys will be granted only as the air traffic situation permits.

E. Waiver of § 91.119. Determine if a waiver of § 91.119 is appropriate.

(1) Waive § 91.119(b) and (c) only if the pilot will still be in compliance with § 91.119(a).

(2) Waive § 91.119(b) and (c) only for nonaerobatic flight, while temporarily exiting or returning to the operating area. The standards aerobatic maneuvers area for U.S. military jet demonstration teams is 1 statute mile either side of show center.

(3) Waive § 91.119(c) only if unoccupied structures are involved, or to allow participating personnel, vehicles, or vessels to be positioned closer than 500 feet from the performing aircraft (see paragraph 5E(5) below).

(4) Waive § 91.119(b) and (c) for flight over structures, roads, vehicles, or vessels under the following conditions for the U.S. Air Force Thunderbirds, U.S. Navy Blue Angels, and Canadian Defense Forces Snowbirds:

(a) when the showline is generally aligned with a runway at an active airport,

(b) when ingress and egress transition of the operating area coincides with established approach or departure paths used for the designated runway;

(c) when aerobatic flight will not be conducted over any nonparticipating persons; or

(d) when nonaerobatic flight over nonparticipating persons is not closer than 200 feet during ingress and egress and within 3 nm of show center on an FAA approved ingress/egress route.

(5) Consult with the regional airshow coordinator as necessary.

F. Review the Organized Manned Free Balloon Competition Manual.

(1) If applicable, determine if the balloon manual clearly delineates the operations to be conducted by, or under the control of, the applicant.

(2) Ensure that, as a minimum, the manual addresses the items listed in section 1, paragraph 8E. If the manual cannot be approved, disapprove the application for a balloon event.

G. Accept the Organized Manned Free Balloon Competition Manual.

(1) Stamp each page with the word "ACCEPTED."

(2) Sign and date each page.

H. Review Race Course Design. If applicable, ensure that the applicant's diagrams are of sufficient detail and include the mathematical formula determinations specified in section 1, paragraph 7.

(1) If the race course design cannot be accepted, disapprove the application.

(2) If the design can be accepted, include the accepted race course design in its entirety as a part of the Certificate of Waiver or Authorization as a special provision.

I. Waiver Disapproval. If the entire operation cannot be approved, complete the FAA Action block on FAA Form 7711-2 and state the reasons for disapproval in the Remarks section of the form. Return the application form to the applicant.

J. Waiver Approval. If the entire operation can be approved, complete the FAA Action block on FAA Form 7711-2 and develop the special provisions.

K. Develop Special Provisions. Develop the list of special provisions appropriate to the aviation event using the information submitted with the application and the suggested special provisions in section 1, paragraph 15D.

L. Issue Certificate of Waiver or Authorization.

(1) Complete FAA Form 7711-1, (figure 49-25) as follows:

(a) In the Title block, use "X"s to mark out the inappropriate word.

(b) Enter the waiver holder's and responsible person's names and addresses as they appear in Items 1 and 2 on the application. (Refer to section 1, paragraph 14A.)

(c) Include a brief summary of the aviation event in the Operations Authorized block. For aviation events involving aerobatic flight, clearly define the dimensions of the affected airspace. In the case of parachute demonstration jumps, use the following statement, "Parachute demonstrations are authorized in accordance with § 105.15."

(d) Except for parachute demonstrations, include in the List of Waived Regulations and Title block each specific regulation waived by the FAA. Ensure that the listed regulations correspond to those on FAA Form 7711-2 and conform to § 91.905. When many regulations are involved, list the specific rules on a separate sheet of paper and attach it to the certificate. Use the following statement, "A list of waived regulations is attached."

(e) Place the total number of special provisions in the appropriate spaces in the Special Provisions block.

i. Type and sequentially number the special provisions on the reverse side of FAA Form 7711-1 or on separate pages.

ii. Use only the special provisions which apply to the operations in the waiver or authorization application.

iii. Group the provisions by type of event, such as airshow provisions or parachute demonstration jump provisions.

(f) Attach any additional pages to the Certificate of Waiver or Authorization.

(g) When an aviation event is scheduled for more than 1 day, use a separate sheet to list the dates and times the certificate is in effect. Use the following statement "See attached page [insert appropriate page number] for dates and times."

(h) Have the appropriate FSDO manager sign FAA Form 7711-1.

(2) Attach to FAA Form 7711-1 a copy of FAA Form 7711-2 and its supporting documents.

(3) Distribute FAA Forms 7711-1 and 7711-2 as follows:

(a) place a copy of both forms in the FSDO file;

(b) send a copy of FAA Form 7711-1 to all affected air traffic facilities; and

(c) return the original of both forms to the applicant.

M. PTRS. Make the appropriate PTRS entry.

6. TASK OUTCOMES. Completion of this task results in one of the following.

A. Issuance of a certificate of waiver.

B. Issuance of a certificate of authorization.

C. Denial of an Application for a Certificate of Waiver or Authorization.

7. FUTURE ACTIVITIES.

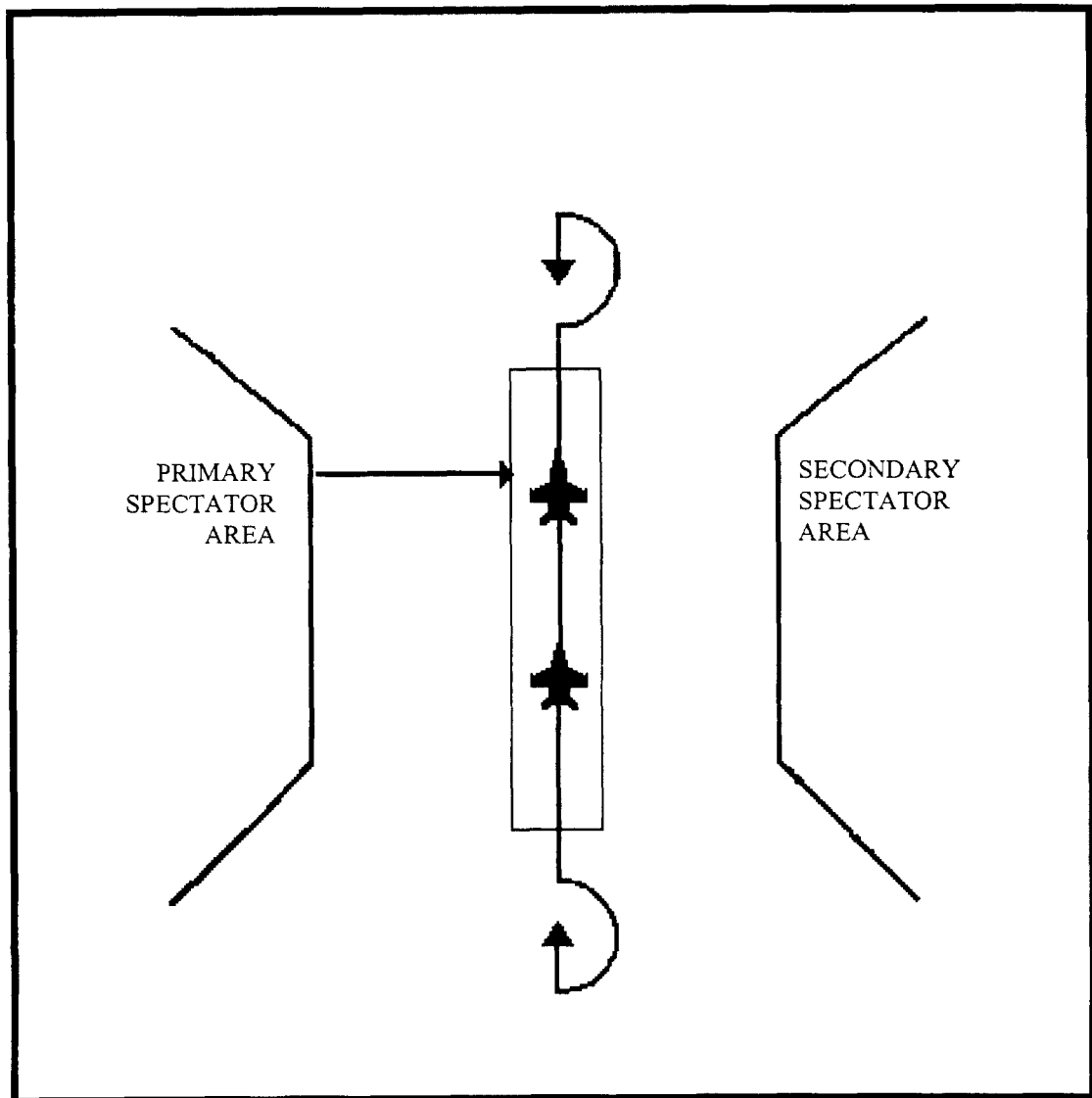
A. Surveillance of an aviation event.

B. Possible cancellation of the waiver or authorization as a result of noncompliance with its provisions.

C. Consideration of a future application for waiver or authorization from the same or other applicants.

[PAGES 49-49 THRU 49-54 RESERVED]

FIGURE 49-1
SHOWLINE USING A RUNWAY AS THE CENTERLINE



**FIGURE 49-2
EGRESS AND INGRESS**

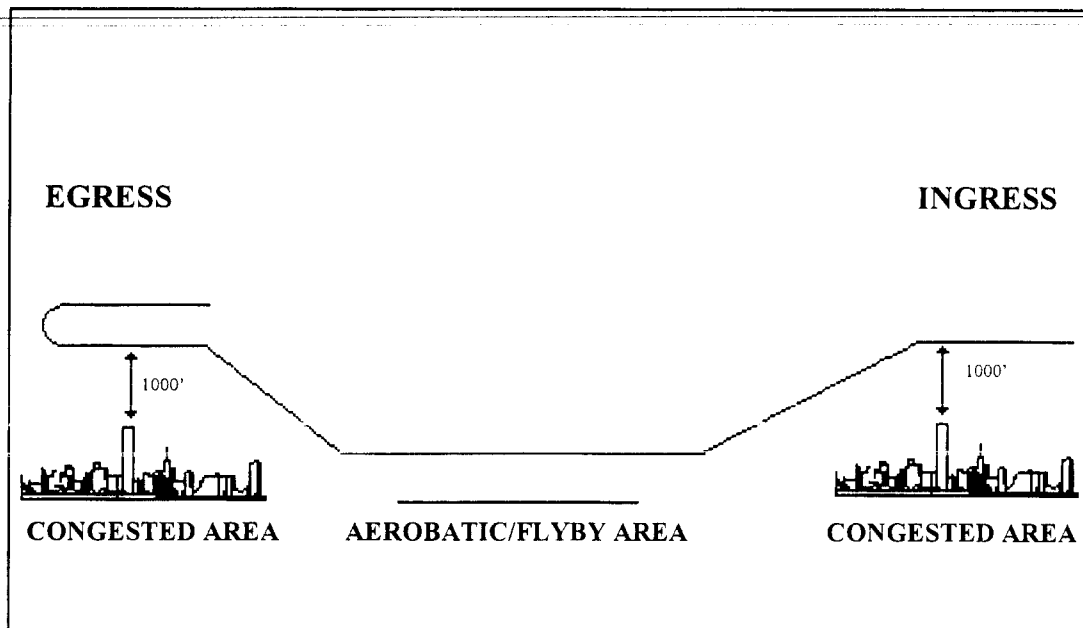


FIGURE 49-3
FAA FORM 7711-2, CERTIFICATE OF WAIVER OR AUTHORIZATION
APPLICATION


No certificate may be issued unless a completed application form has been received (14 C.F.R. §§ 101 and 105).

US Department of Transportation Federal Aviation Administration APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION		Form Approved: O.M.B. No. 2120-0027 APPLICANTS - DO NOT USE THESE SPACES	
		Region GREAT LAKES	Date MARCH 13, 1996
		Action As Per 7711-1 <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved - Explain under "Remarks"	
		Signature of authorized FAA representative James E. Hightower	
INSTRUCTIONS			
<p>Submit this application in triplicate (3) to any FAA Flight Standards district office.</p> <p>Applicants requesting a Certificate of Waiver or Authorization for an aviation event must complete all the applicable items on this form and attach a properly marked 7.5 series Topographic Quadangle Map(s), published by the U.S. Geological Survey (scale 1:24,000), of the proposed operating area. The map(s) must include scale depictions of the flightlines, showlines, race courses, and the location of the air event control point, Police dispatch, ambulance, and fire fighting equipment. The applicant may also wish to submit photographs and scale diagrams as supplemental material to assist in the FAA's evaluation of a particular site. Application for a Certificate of Waiver or Authorization must be submitted 45 days prior to the requested date of the event.</p> <p>Applicants requesting a Certificate of Waiver or Authorization for activities other than an aviation event will complete Items 1 through 8 only and the certification, Item 15, on the reverse.</p>			
1. Name of organization HIGH ON KALAMAZOO, INC.		2. Name of responsible person JOHN M. ELLIS	
3. Permanent mailing address	House number and street or route number 5605 PORTAGE ROAD	City KALAMAZOO	State and ZIP code MI 49002
4. FAR section and number to be waived 91.117 (a & b), 91.303 (c, d & e), 91.119 (b & c), 91.127, 91.129, 105.15			
5. Detailed description of proposed operation (Attach supplement if needed)			
6. Area of operation (Location, altitudes, etc.) KALAMAZOO COUNTY AIRPORT 10,000' AND BELOW, RADIUS OF TEN (10) NAUTICAL MILES.			
7a. Beginning (Date and hour) APPLICANT MAY USE ATTACHMENT		7b. Ending (Date and hour) APPLICANT MAY USE ATTACHMENT	
8. Aircraft make and model (a)	Pilot's Name (b)	Certificate number and rating (c)	Home address (Street, City, State) (d)
APPLICANT MAY USE ATTACHMENT			

FAA Form 7711-2 (9-88) Supersedes Previous Edition

FIGURE 49-3

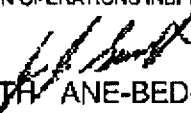
FAA FORM 7711-2, CERTIFICATE OF WAIVER OR AUTHORIZATION APPLICATION - Continued

ITEMS 9 THROUGH 14 TO BE FILLED OUT FOR AIR SHOW/AIR RACE WAIVER REQUESTS ONLY.				
9. The air event will be sponsored by:				
HIGH ON KALAMAZOO, INC.				
10. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.
	5605 PORTAGE ROAD	KALAMAZOO	MI 49002	(616) 343-2548
11. Policing (Describe provisions to be made for policing the event.)				
APPLICANT MAY USE ATTACHMENT				
12. Emergency facilities (Mark all that will be available at time and place of air event.)				
<input checked="" type="checkbox"/> Physician <input checked="" type="checkbox"/> Fire truck <input checked="" type="checkbox"/> Other - Specify <u>EMS HELICOPTER</u> <input checked="" type="checkbox"/> Ambulance <input checked="" type="checkbox"/> Crash wagon				
13. Air Traffic control (Describe method of controlling traffic, including provision for arrival and departure of scheduled aircraft.)				
APPLICANT MAY USE ATTACHMENT				
14. Schedule of Events (Include arrival and departure of scheduled aircraft and other periods the airport may be open.)				
Hour (a)	Date (b)	Event (c)		
		APPLICANT MAY USE ATTACHMENT		
If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.				
Please Read  The undersigned applicant accepts full responsibility for the strict observance of the terms of the Certificate of Waiver or Authorization, and understands that the authorization contained in such certificate will be strictly limited to the above described operation.				
15. Certification - I CERTIFY that the foregoing statements are true.				
Date	Signature of Applicant			
02-12-96	<u>John M. Ellis</u>			
Remarks				

FAA Form 7711-2 (2-88) Supersedes Previous Edition

FIGURE 49-4
FAA FORM 8710-7, STATEMENT OF ACROBATIC COMPETENCY

FRONT

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION STATEMENT OF ACROBATIC COMPETENCY	
PILOT	
J. J. JONES	
TYPE CERTIFICATE/NUMBER	
COMMERCIAL 1234567	
ISSUANCE DATE	EXPIRATION DATE
03-30-96	03-31-97
GENERAL AVIATION OPERATIONS INSPECTOR (Signature)	
 J. J. SMITH ANE-BED-FSDO	

FAA Form 8710-7 (5-78)

BACK


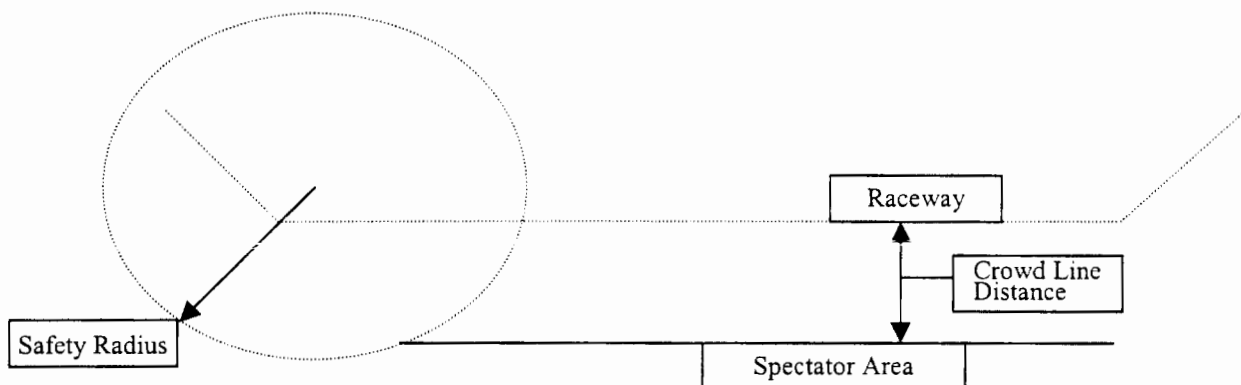
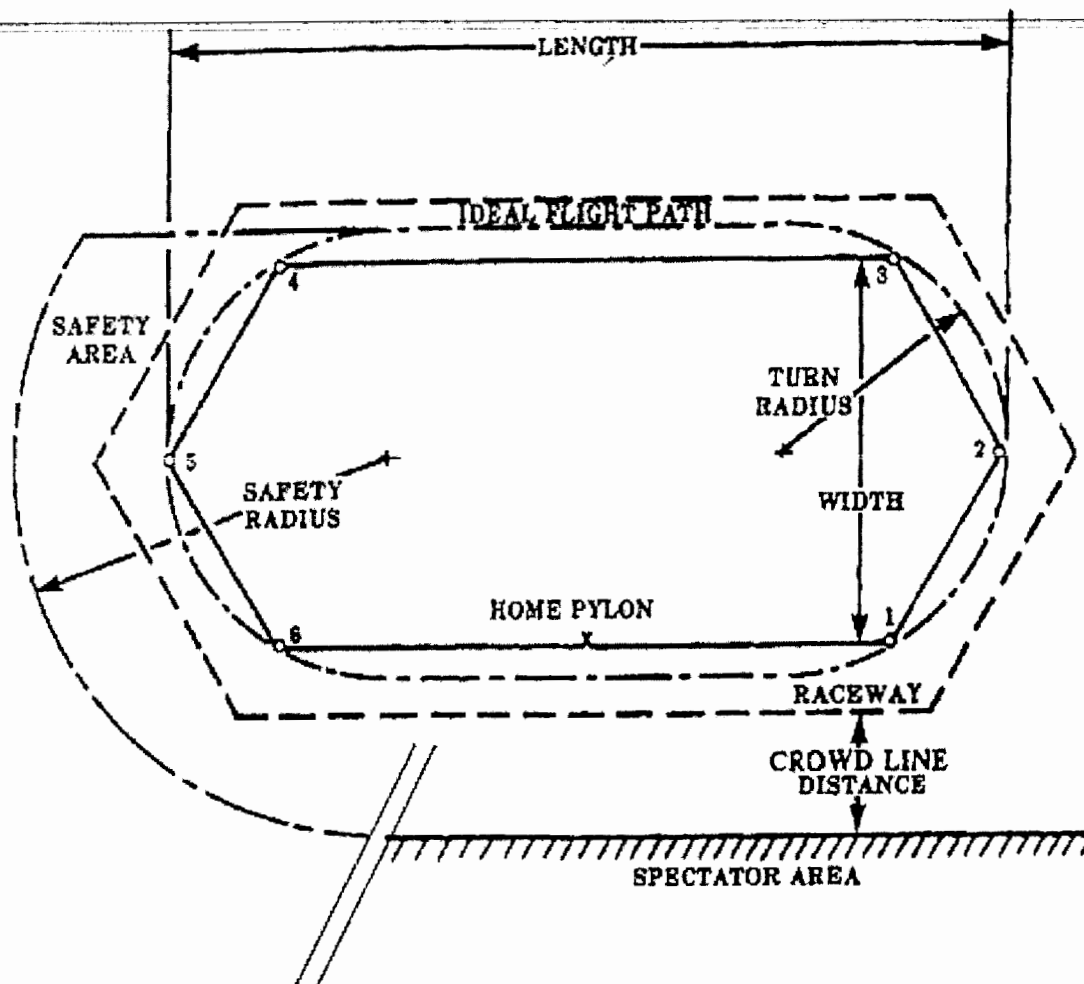
MANEUVER LIMITATIONS	
NONE	
ALTITUDE LIMITATIONS	AUTHORIZED AIRCRAFT
LEVEL II	PITTS SPECIAL
I understand that this statement of competency does not authorize deviation from FAR 91 except as defined by waiver thereto, or to the terms of Special Provisions contained in any waiver to FAR 91.	
PILOT (Signature)	
	

FIGURE 49-5
TYPICAL AIR RACE SITE



**FIGURE 49-6
TYPICAL UNLIMITED RACE COURSE SITE**

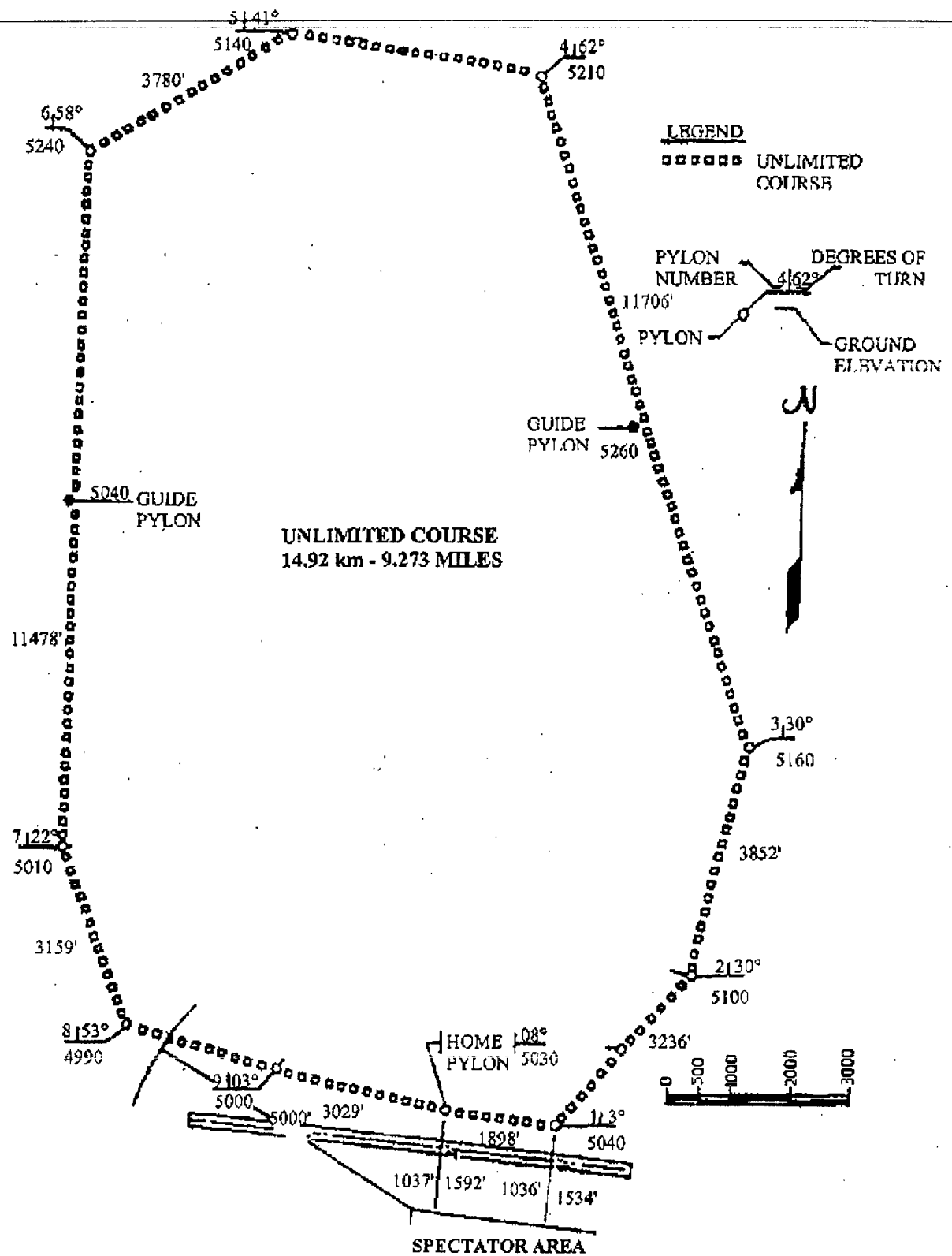
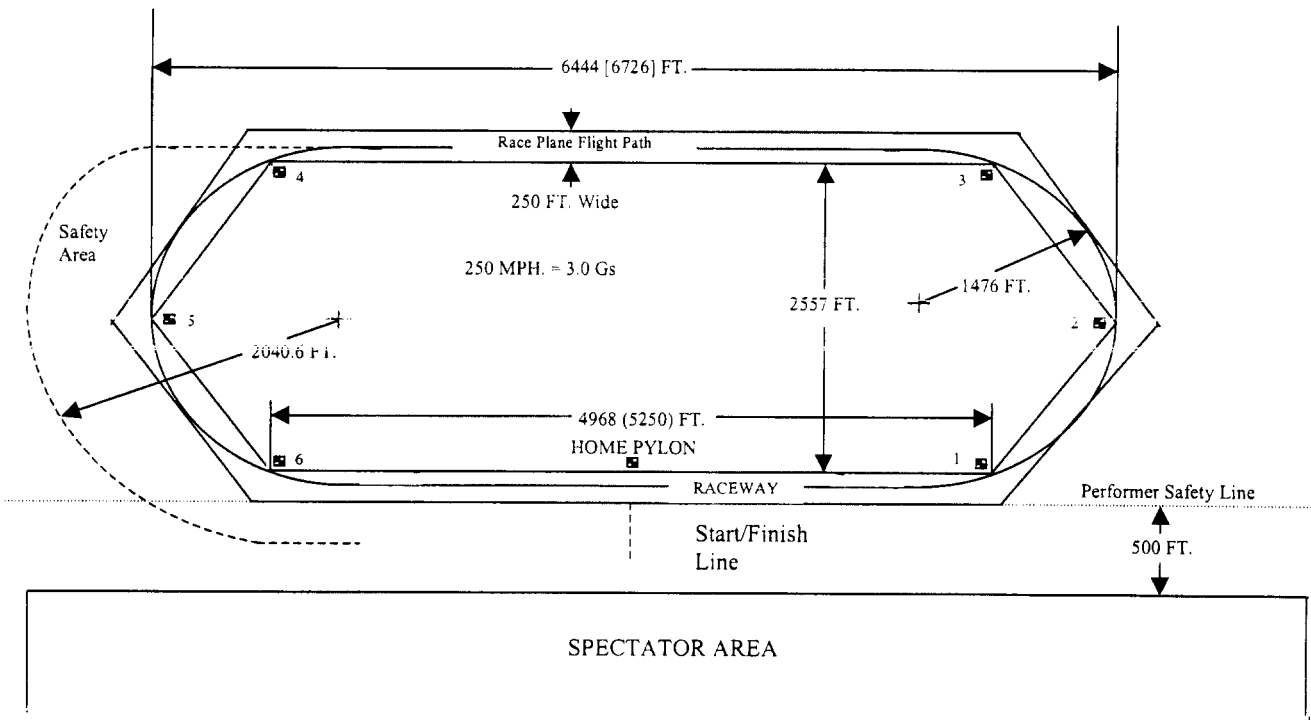
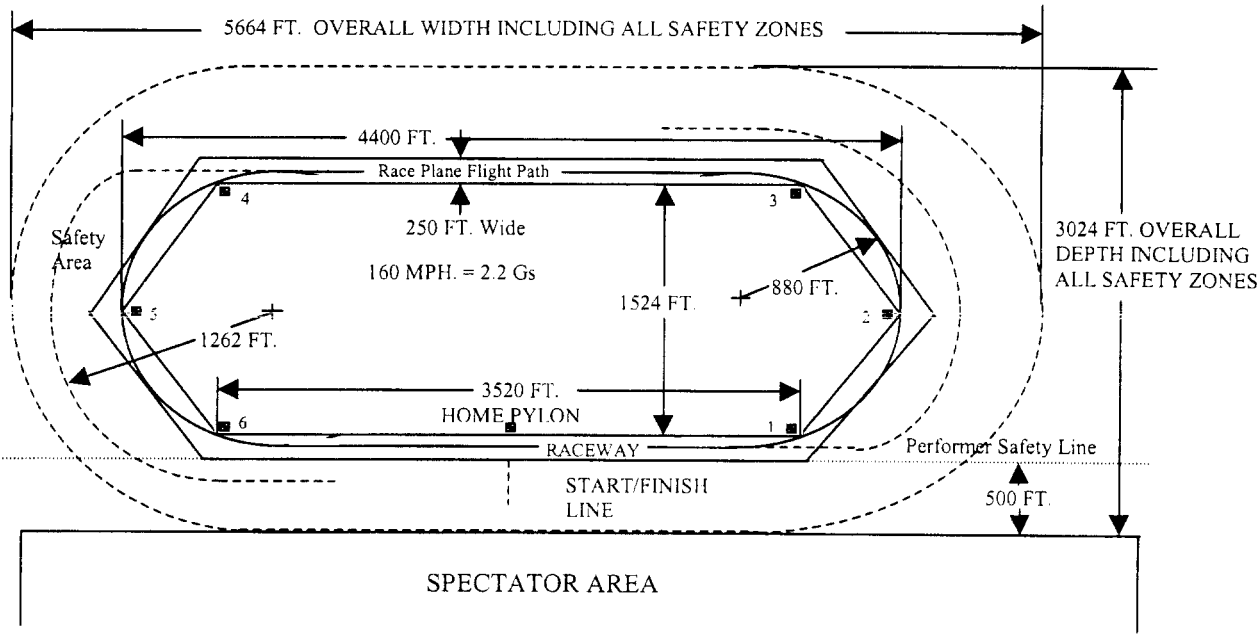


FIGURE 49-7
EXAMPLES OF RACE COURSES

3.0 MILE [5.0 KM] FORMULA ONE AIR RACE COURSE
(Suitable for International Formula One, Sport Biplane and Formula V)



2.0 MILE FORMULA V AIR RACE COURSE

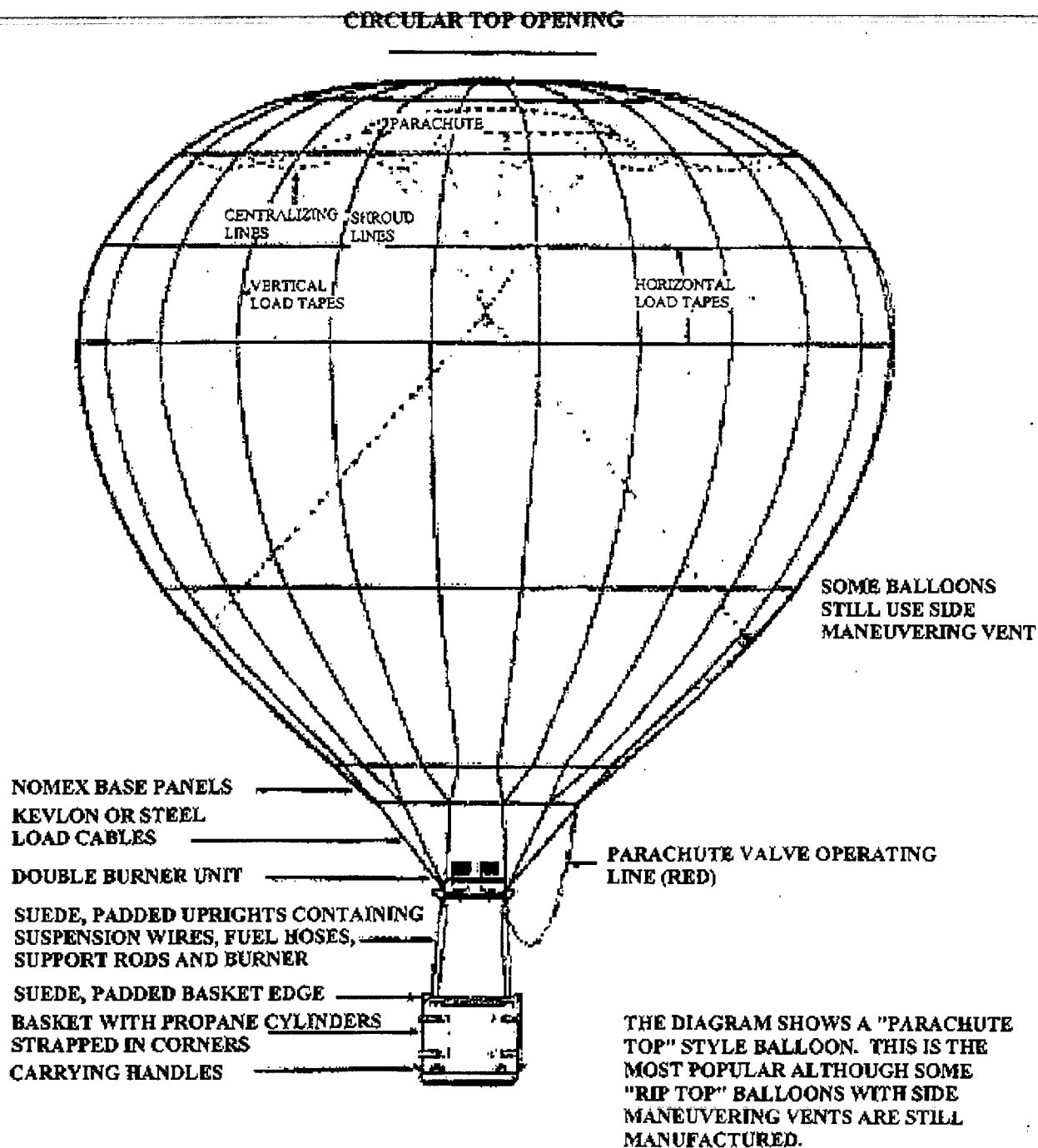


**FIGURE 49-8
PYLON RACING (RACE COURSE DESIGN PARAMETERS)**

	Formula Vee	Sport Biplane	At-6/SNJ	Int'l Formula 1	T-28	Sport Class	Unlimited
Max Speed (statute mph/knots)*	160.0/ 139.0	210.0/ 182.5	225.0/ 195.5	250.0/ 217.2	300.0/ 260.7	400.0 347.6	450.0/ 391.0
Max Speed (ft/sec) (V)	234.7	308.0	330.0	366.7	440.0	587.0	660.0
Min Turning Radius (R) for 3.5 g turn (ft)	509.9	878.4	1008.3	1244.8	1792.6	3241.5	4033.3
Scatter Distance (S) (ft)	---	---	1300.4	---	1733.8	2289.3	2600.8
250' altitude							
150' altitude	716.3	940.1	---	1119.2	---	---	---
Scatter Radius (ft) (Sr) for minimum turn radius	879.2	1286.6	1645.5	1674.0	2493.9	3968.4	4799.1
Safety Radius (ft) (Sfr) for minimum turn radius	1063.9	1490.7	1964.1	1888.5	2844.6	4319.8	5182.0
Crowd-to-Showline Distance (ft)	500.0	500.0	500.0	500.0	500.0	500.0	500.0

* Actual maximum speed may vary depending on conditions and race site.

FIGURE 49-9
TYPICAL HOT AIR BALLOON



**FIGURE 49-10
BALLOON TERMINOLOGY**

BLAST VALVE	A high pressure fuel valve either full on or full off.
BULK TANK	Used for fuel storage and transfer to supply tanks.
DEFLATION PORT	Refers to the rip panel or envelope section removed for envelope deflation.
DROP LINE	A handling line carried in the basket to allow assistance by the ground crew when required.
ENVELOPE	The nylon material that encloses the lifting source.
EQUILIBRIUM	That point when lift equals weight and the balloon is neither climbing nor descending.
FALSE LIFT	Refers to the venturi effect of the wind that causes the balloon to lift before true equilibrium is reached.
FUEL	Generally propane.
GORE	Series of panels running from apex to mouth.
LOAD TAPES	Vertical or horizontal stress bearing nylon webbing.
MANEUVERING VENT	The envelope section that can be opened and closed to control the ascent or descent.
MOORED	Refers to a balloon secured by more than three lines.
PANEL	A fabric section sewn as part of a gore.
PARACHUTE TOP	A combination deflation port and maneuvering vent that is self-sealing when opened in flight.
SKIN TEMPERATURE	The temperature of the fabric envelope.
STEP CLIMB	A series of climbs and level-offs in ascent or descent.
TETHERED	Refers to a balloon secured by three lines or less.

FIGURE 49-11
SAMPLE LIST OF WAIVED REGULATIONS FOR BALLOON OPERATIONS
BY SECTION AND TITLE

Section 91.119(b), Minimum Safe Altitude

Section 91.119(b) is waived to allow balloon flight over any congested area of a city, town, or settlement or over an open air assembly of persons at an altitude of 500 feet above the highest obstacle, and within a horizontal radius of 500 feet of the balloon within a _____ nautical mile radius.

Note: Launching a balloon during the balloon meet anywhere in, into, or over a congested area or an open air assembly of persons shall require the pilot to be in a continuous normal rate of climb until an altitude of 500 feet above the highest obstacle within a horizontal radius of 500 feet of the balloon is attained.

In addition, § 91.119(b) is also waived to allow flight over, but no closer than 75 feet to, persons in the designated spectator areas that are under the direct control of the certificate holder.

Note: The designated spectator area shall be a minimum of 200 feet in radius from the designated or declared goal or target.

Section 91.119(c), Minimum Safe Altitude

Section 91.119(c) is waived to allow flight over open water or sparsely populated areas no closer than 200 feet from any person, vessel, vehicle, or structure.

FIGURE 49-12
EXAMPLE OF A BALLOON COMPETITION MANUAL

BALLOON COMPETITION MANUAL

This manual has been prepared as part of the application for the issuance of a Certificate of Waiver with attachments and special provisions for a Manned Free Balloon Competition on *[insert date]*. *[insert event name]*
BALLOON RACE

Table of Contents

- I. Purpose
- II. Responsibilities and Procedures
 - a) Duties of Personnel
 - b) Registration and Airworthiness Determination
 - c) Pilot and Event Flight Crewmembers
 - d) Pilot/Crew Briefing Responsibilities
 - e) Letter of Agreement
 - f) Event Documentation
- III. Ground Operations
 - a) Clear Areas
 - b) Spectator Areas
 - c) Crowd Control Requirements
 - d) Landowner Relations/Notification
- IV. Flight Operations
 - a) Areas of Operations
 - b) Types of Operations
 - c) Altitudes
 - d) Weather Requirements
 - e) Communications Requirements
 - f) Air Traffic Coordination

FIGURE 49-12
EXAMPLE OF A BALLOON COMPETITION MANUAL - Continued

SECTION I.

PURPOSE:

This manual is submitted as a part of an application for a waiver of Title 14 of the Code of Federal Regulations (14 CFR) part 91, §§ 91.119(b) and 91.119(c), by the *[insert name of organization]* for the *[insert name of event]* Balloon Race. Specifically, the waiver will allow officially registered balloons to operate at an altitude of no less than *[insert number]* feet above the highest obstacle within *[insert number]* feet radius of the balloon enroute to the target within a *[insert number]* nautical mile (or other specified distance) radius of the designated launch field or goal. It will also allow for officially registered balloons to operate at *[insert number]* feet AGL over spectators and to set goals and/or targets at a minimum distance of *[insert number]* feet from physical barriers provided for spectator control.

No waiver is requested nor is a waiver required by 14 CFR for any mass ascensions or pilot choice launches.

SECTION II.

RESPONSIBILITIES AND PROCEDURES

a) DUTIES OF PERSONNEL

- 1) Event Director - *[insert name]*
- 2) Operations Director - *[insert name]*
- 3) FAA Liaison - *[insert name]*
- 4) Weather Officer - *[insert name]*
- 5) Safety Officer - *[insert name]*

b) REGISTRATION AND AIRWORTHINESS DETERMINATION

Balloons flown at the event must have current certificates of registration and airworthiness, or in place of the latter, an equivalent document from the Federal Aviation Administration. Chapter *[insert number]* of the competition rules cover procedures for balloons damaged or otherwise made unairworthy during the event. Throughout the event the Safety Officer or his designees; and appropriate FAA personnel will be consulted as necessary.

c) PILOT AND EVENT FLIGHT CREWMEMBERS

Each pilot must hold the appropriate pilot certificate (Private or Commercial) with Lighter-Than-Air Category and Free Balloon Class Rating. Each pilot must show evidence of current Flight Review (14 CFR part 61, § 61.56) and must also show evidence of currency per § 61.57. Minimum hours as PIC per the organizers specified time must also be shown.

Event flight crewmembers carried on board a balloon during the event must have been briefed by the pilot of the balloon and must attend the pilot briefing for that flight. Each event flight crewmember must sign the waiver form supplied by the pilot. Each event flight crewmember must attest that they have attended the applicable pilot briefing(s) and have read and understand the conditions of the waiver. Only *[insert number]* event flight crewmember(s) may be carried in each balloon during the flight.

FIGURE 49-12
EXAMPLE OF A BALLOON COMPETITION MANUAL - Continued

d) PILOT CREW BRIEFING PROCEDURES

All pilots are required to sign a statement indicating that they have read and understand the provisions of the waiver and the official [insert title] Competition Rules prior to any competitive flight.

Before each flight all pilots must attend the flight briefing. Chapter [insert number] of the competition rules provides details of all briefings.

e) LETTER OF AGREEMENT

Letter of agreement will be issued and signed as required for the specific type of event.

f) EVENT DOCUMENTATION

All relevant registration files, task data sheets, pilot registration information etc., will be maintained by the organizer at least [insert number] days after the event and will be made available to the FAA Monitor upon request. Competition maps and task sheets will be made available to the FAA Monitor at the time of the pilot briefing.

SECTION III.

GROUND OPERATIONS

a) CLEAR AREAS

Clear areas are established at each target site. These areas are kept clear of spectators and are usually fenced. [Insert type of officials] will police any area (such as the target area on the main launch field) to keep unauthorized persons out. In the Minimum Altitude Diagram, this is referred to as the "Target Area."

b) SPECTATOR AREAS

The primary competitive spectator area is located at the main launch site. Crowd control is initiated by physical barriers around the launch site and target areas controlled by [insert type of officials]. Official and balloon recovery vehicles are parked in restricted areas. Traffic is controlled by local police as required. Use of existing and temporary barriers secure spectators from the briefing area and headquarters and from potential low level flight areas surrounding goals/targets (see additional remarks under "ALTITUDES").

Competitive goals/targets set outside of the primary launch area in remote areas attract few, if any, spectators beyond those involved in race operations (officials and crews). Scoring/measuring officials control these areas as determined by conditions, and will isolate the area surrounding the goal/target from any unauthorized personnel.

c) CROWD CONTROL REQUIREMENTS

Crowd control will be provided by [enter law enforcement agency name(s)] agencies and officials of the balloon event under the direction of the Safety Officer.

d) LANDOWNER RELATIONS/NOTIFICATION

Positive landowner relations are vital to the continuance of sanctioned events. There is an ongoing effort by all involved persons to maintain good landowner relations for the event. Additionally, as per Rule [enter number] pilots must obtain permission for launch from private property; and per Rule [enter number] minimize disturbing landowners. Landowners may request that their property be indicated on the competition map as a Prohibited Zone (PZ) as per Rule [enter number].

FIGURE 49-12
EXAMPLE OF A BALLOON COMPETITION MANUAL - Continued

SECTION IV.

FLIGHT OPERATIONS

a) AREA OF OPERATION

The operations will occur in a [insert number] mile radius of the launch field located at [insert name] Airport as indicated on the official competition map (to be provided as requested). Final landings may occur beyond these boundaries, but no pilot choice take-offs or mass ascensions will exceed these boundaries. Headquarters for the event operations will be located at the [insert name of location].

b) TYPES OF OPERATIONS

The event will consist of single and multiple tasks as called by the Director after consultation with other approved competition officials, as appropriate, considering the conditions at hand and forecast to develop during the anticipated flight times.

The tasks will include:

1) PILOT DECLARED GOAL

Each pilot will fly from a launch area and shall attempt to drop a marker close to a goal selected by him/her.

2) JUDGE DECLARED OR MULTIPLE JUDGE DECLARED GOAL

Each pilot will fly from a launch area and attempt to drop a marker close to a goal or goals.

3) HARE AND HOUND

A hare balloon will fly from the launch area and each pilot will attempt to fly near the final landing place of the hare and drop the marker.

4) FLY IN TASK

Pilots find their own launch areas and attempt to reach a set goal or target.

5) FLY ON TASK

A task where a pilot declares a goal, to which he flies after dropping his marker in another task.

6) GORDON BENNETT MEMORIAL

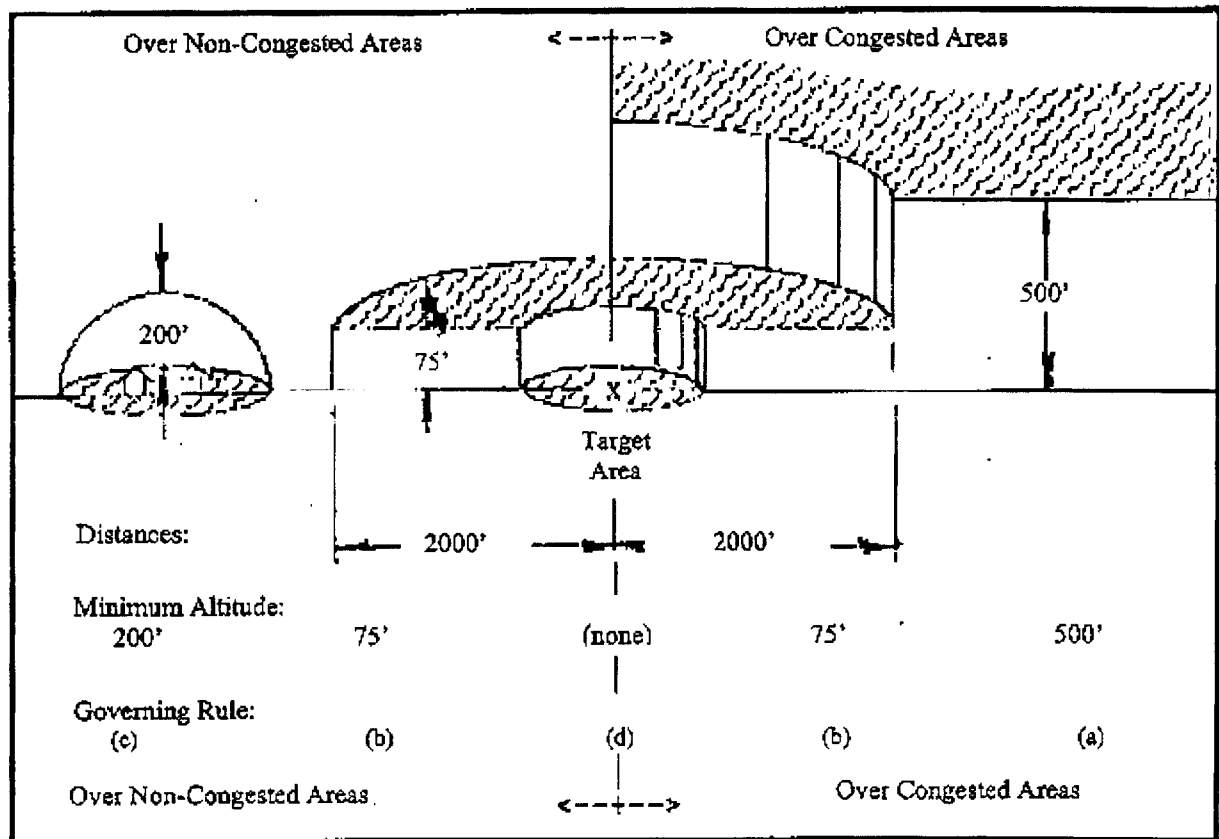
Pilots will attempt to drop their markers within a Scoring Area as close as possible to a target or other defined location(s).

7) MAX DISTANCE - MINIMUM DISTANCE

Pilots will attempt to drop their markers in the Scoring Area a maximum or minimum distance from the launch point as specified on the task sheet.

FIGURE 49-12
EXAMPLE OF A BALLOON COMPETITION MANUAL - Continued

c) MINIMUM ALTITUDE DIAGRAM



d) ALTITUDES

The waiver provides that registered balloons will be allowed to make approaches to targets and/or goals within the designated areas. Balloons making these approaches will be permitted to fly over the designated spectator areas at an altitude of not less than [insert number] feet AGL. The balloons must have attained a state of altitude equilibrium at this [insert number] feet minimum altitude and not be descending while passing over designated spectator areas. It is felt that this altitude is sufficient to allow for unusual circumstances with an adequate margin of safety for spectators.

In order to provide the highest possible level of safety for spectators, the scoring officials will cause scoring/measuring officials to be positioned among the spectators to allow crowds to be shifted as necessary and to provide warning regarding any markers that may be dropped in the spectator areas. Announcements over the public address systems will also advise the spectators of the possibilities of both low flying balloons over the area and of markers being dropped in this area.

e) WEATHER REQUIREMENTS

Flight operations will be conducted during the period from published Sunrise to Sunset, with the Visual Flight Rules (VFR) and weather conditions as specified in § 91.155. Maximum demonstrated surface winds must be [insert number] or less.

The decision for flight is the sole responsibility of the Pilot and the decision of whether to hold a task is the sole responsibility of the Director after consultation with appropriate safety officials.

FIGURE 49-12
EXAMPLE OF A BALLOON COMPETITION MANUAL - Continued

f) COMMUNICATIONS REQUIREMENTS

Primarily by required pilot briefing, however, supplementary information is also given on local radio stations and on the public address system. Most pilots carry either FM, CB or aircraft radios and some communication is possible by radio.

g) AIR TRAFFIC COORDINATION

A NOTAM will be requested from the [insert name] FSS advising air traffic of numerous balloons in the [insert name] area at varying altitudes from [insert date] through [insert date] during the three hours immediately after sunrise and three hours prior to sunset.

This Operations Manual includes the information and requirements contained in the following attachments.

ATTACHMENTS:

- Sectional of Area
- List of Pilot Entries
- Schedule of Events
- Statement of Responsibility
- Competition Rules

CHAPTER 50. SURVEILLANCE OF AN AVIATION EVENT

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

- Air Races: 1685
- Aerobatic Airshow: 1686
- Parachute Jumps: 1696
- Balloon Events: 1697
- Aerobatic Competitions: 1698

2. OBJECTIVE. The objective of this task is to determine if the holder of a Certificate of Waiver or Authorization is in compliance with the terms set forth in the waiver or authorization. Successful completion of this task results in the continuation or cancellation of an existing waiver or authorization.

3. GENERAL.

NOTE: As per volume 1, chapter 1, section 2, page 1-7, paragraph 3 of this handbook, no regional supplements to aviation event policy are permitted.

A. Surveillance Policy. Airshows, fly-ins, and other gatherings of general aviation aircraft and airmen are opportunities for the Federal Aviation Administration (FAA) to present a positive image to the aviation community with whom we work and the general public. Many of the aircraft operators attending these aviation events are regular users of our air traffic and flight service facilities, but their contact with Flight Standards personnel may have been rare. Most of the people who fly their airplanes to fly-in events and airshows are aviation enthusiasts and hobbyists and are not employed in the aviation industry as pilots.

(1) The FAA would like this important segment of airspace users to have a very positive image of inspectors and the safety activities inspectors perform. Therefore, the FAA encourages inspectors to establish early contact with sponsors and organizers of aviation events so that informational and Aviation Safety Program activities can be planned to serve attendees.

(2) Under no circumstances should these gatherings be targeted for a blanket sweep inspection of spectator airmen and aircraft.

(3) The scope of surveillance conducted on aviation event performers and their aircraft will be determined by the Flight Standards District Office (FSDO) manager.

(4) Inspectors assigned work functions at aviation events should strive to earn the confidence of the attending and participating airmen. This can be accomplished by displaying expert technical knowledge as an aviation safety professional.

(5) The guidance in this chapter does not preclude inspectors from taking appropriate action to resolve situations they observe that require immediate corrective action.

B. Aviation Event Surveillance. This chapter provides the surveillance procedures for evaluating an aviation event.

(1) The procedures ensure that current programs, with an emphasis on safety, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested.

(2) The surveillance steps in section 2 encompass all types of aviation events. Portions can be eliminated when they are not applicable; for example, inspection of a balloon competition site is not required when no balloon events are scheduled at an airshow location.

C. Issuance of Waiver or Authorization. FAA Form 7711-2, Certificate of Waiver or Authorization Application (figure 50-1), is reviewed and approved or disapproved and FAA Form 7711-1 (figure 50-2) issued before the aviation event. (See chapter 49, Issue a Certificate of Waiver or Authorization for an Aviation Event.) Unless unusual circumstances warrant, the office manager assigns the surveillance of the aviation event to the same inspector who approved the Certificate of Waiver or Authorization.

D. Compliance with Waiver or Authorization. The performers and the holder of the Certificate of Waiver or Authorization are responsible for compliance with the terms of the waiver or authorization.

E. Weather Considerations. Often because of deteriorating weather conditions, participants cannot perform their normal routine. The inspector should cooperate with team leaders when they have to make alterations to their acts. Before canceling an act, the inspector should explain the reasons to the person in charge of the airshow. Rather than canceling an entire act, it might be possible to eliminate certain maneuvers and still allow the demonstration in a modified form. The final decision to conduct a modified act is the responsibility of the performer. Performers must not feel pressured to conduct an act if they are not completely sure it can be performed safely.

F. Military Team Considerations. See volume 2, chapter 49, section 1, paragraph 9.

4. AVIATION SAFETY INSPECTOR RESPONSIBILITIES. The inspector-in-charge (IIC), or other inspectors assisting the IIC, is *not responsible for the management, control, or direction of the aviation event*. Other inspectors may be assigned to assist in the surveillance; however, all coordination and communication with the waiver or authorization holder should be through the inspector who is primarily responsible for the surveillance, the IIC.

A. Surveillance Responsibilities. The inspector's responsibility is to provide adequate safety oversight of the aviation event and to ensure compliance with the provisions of the waiver or authorization. The inspector is also "on-hand" to provide guidance concerning the waiver or authorization's general and special provisions. Aviation events normally operate on very tight schedules; therefore, the inspector should not interrupt an event except to address safety-related issues requiring immediate attention.

B. Inspector Authority. Although authority is not limited to the following, generally, the inspector has the authority to:

(1) Change the effective time and date of the waiver or authorization after proper coordination with the appropriate Air Traffic facilities and flight service station;

(2) Add performers to the schedule of events if all terms of the Certificate of Waiver or Authorization can be met;

(3) Change the ceiling, visibility, and wind limitations contained in the special provisions, provided that there is no adverse effect on safety; and

(4) Cancel or delay any or all acts if it is deemed necessary in the interest of safety.

(5) FAA personnel will not manage, control, or direct any portion of the event when acting as IIC.

C. Exercising Inspector Authority.

(1) Every year, FAA inspectors monitor ~~hundreds of aviation events across the country~~. During that process, it is necessary to weave constantly through complex technicalities and interpersonal situations. In light of this overwhelming and ongoing success story, we believe that all of those successful inspectors should be an example in relating to others.

(2) Most FAA inspectors balance and exercise their authority with a demeanor that results in effective accomplishment of FAA safety objectives. When surveying an aviation event, where the inspector is likely to have public contact, the inspector should maintain a positive attitude toward the aviation and general public the inspector encounters. (See paragraph 3A above.)

(a) Inspectors who conduct themselves with confidence will not be perceived as intimidating nor will this positive attitude be perceived as arrogance.

(b) The inspector's job is to assure that the conditions of the waiver or authorization are followed. The sponsor or a representative is responsible for running the show in a safe manner.

(c) Courtesy and respect must be displayed toward participants and attendees. Public criticism or condemnation of individuals degrades the FAA's image.

(d) An expression of sincere empathy toward sponsor problems assures the sponsors cooperation in safety matters. Consider each situation on a case-by-case basis and be sensitive to the situation without overreacting.

(e) Inspectors should adopt an objective and credible philosophy and avoid being overly bureaucratic.

(f) Prosecutorial discretion should be exercised concerning performers who find it difficult to carry their FAA airman and medical certificates on their person or in the aircraft while conducting a performance.

(g) When it is necessary to act on a matter, inspectors must act in an effective, timely, and positive manner without making threats.

(h) Inspectors should always be open and communicative and strive for win/win situations.

(i) Inspectors must obtain the permission of the aircraft owner/operator before entering any aircraft.

5. PRE-SHOW BRIEFING. Waiver and/or authorizations for aerial demonstrations must include the requirement for a pre-show briefing of all performers.

A. Attendance.

(1) For North American military flight teams, it is permissible for the team leader, or a team's representative, to attend in lieu of every member and assume the responsibility for briefing each member of the team.

(2) If civil pilots' certificates are checked at some other time, only the team leader need attend the briefing.

B. Briefing Content. It is imperative that the briefing cover every aspect of the event. Figure 50-3 contains a general briefing outline.

C. Role of IIC. The IIC is not responsible for conducting the briefing, but he/she must be available at the briefing for any questions concerning the Certificate of Waiver or Authorization and its provisions.

D. Non-Airport Sites. If the event is to be conducted at a non-airport location, special procedures for the briefing of the performers must be established.

E. Remote Location. Performers who arrive from a remote location must be briefed by telephone.

6. AEROBATIC COMPETENCY. In order for any pilot (other than pilots of military aircraft or operators of uncertificated ultralight vehicles) to perform aerobatic maneuvers at aviation events authorized by a Certificate of Waiver or Authorization, the pilot must have in his/her possession a valid FAA Form 8710-7, Statement of Acrobatic Competency (figure 50-4). (See chapter 31, Issue/Renew a Statement of Aerobatic Competency.)

A. Issue Date. The Statement of Acrobatic Competency must have been issued in accordance with industry programs or as directed by AFS-800. This authority is no longer valid after the expiration date annotated on the SAC.

B. Aerobatic Contests, Air Races, and Aerobatic Practice Areas. Pilots who are competing in an aerobatic contest (not associated with an airshow), flying in an air race, or practicing in a prescribed aerobatic practice area (authorized by FAA Form 7711-1 for that specific purpose) do not have to have FAA Form 8710-7.

7. OBSERVANCE OF AIRSHOWS, AIR RACES, AND AEROBATIC CONTESTS. Each district office manager who issues a Certificate of Waiver or

Authorization for aviation events, such as airshows, air races, or aerobatic competitions, must determine the amount of surveillance that is required to ensure compliance with the terms of the waiver or authorization. District office managers should consider the extent of surveillance necessary with respect to the number of aircraft, type of activity, number of spectators, and the potential impact on aviation safety.

A. Surveillance Team. As a minimum, the district office manager should assign at least one qualified operations inspector to observe each airshow and air race. Airworthiness, avionics, or other operations inspectors may be assigned as part of a team depending upon the size and complexity of the event. The IIC may also be responsible for providing on-the-job training (OJT) to another operations inspector in aviation event surveillance.

B. Surveillance Responsibilities. Although the agency recognizes the growth and maturity of the airshow industry and applauds its conscientious effort to improve safety, the responsibility for assuring compliance with the regulations, and the terms and limitations of a Certificate of Waiver or Authorization, rests with the FAA.

C. Control Point. Experienced, successful sponsors have learned the value of establishing a control point where the sponsor or a designated representative, i.e., show manager, can control the event. Before the event, a control point site should be established, and the inspector should be familiar with the location of the control point. Since the control point is an ideal location for conducting a portion of the surveillance, the inspector shall be allowed full, easy access to and from the control point.

D. Showline Surveillance. If inspector resources allow, an inspector other than the IIC could monitor the adherence to showline restrictions by observing the showline(s) from a vantage point that will permit observation down the showline and that is well off the end of the showline toward the end of the aerobatic maneuver area. If this type of surveillance is to be conducted, performers should be advised in the pre-show briefing.

E. Sponsor Responsibilities. The sponsor's responsibilities include, but are not limited to:

(1) Assuring the event sponsor and participants comply with all terms and limitations of the waiver or authorization;

(2) Familiarity with the waiver or authorization, as well as being aware of other individuals

assigned the responsibilities of crowd control, emergency facilities, transient aircraft lookouts, etc.;

(3) In the event the crowd gets out of control, discontinuance of the aerial demonstrations until control is regained;

(4) If unauthorized transient aircraft enter the local area, advising pilots performing aerial demonstrations to discontinue their routines until the transient aircraft is clear; and

(5) If spectators inadvertently enter unauthorized areas, stopping operations until the spectators are under control.

F. Effect of Weather on Aviation Events. To preclude cloud penetration during an aerial demonstration, it is important to point out that certain sections of the regulations are NOT waived for an airshow.

(1) Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.155, prescribes the minimum visibility and distances from clouds necessary to maintain visual flight rules (VFR) conditions.

(2) Section 91.173 requires an instrument flight rules (IFR) flight plan and an appropriate air traffic control (ATC) clearance in order to operate under IFR.

(3) NEITHER OF THESE RULES ARE WAIVED, and it cannot be assumed that a performer has an IFR clearance simply because a Notice to Airman (NOTAM) has been issued for the affected airspace. A NOTAM does not, in itself, necessarily exclude other aircraft from transiting the area. For this reason, the FAA is concerned about an aerobatic operation that would first penetrate a cloud layer (perhaps vertically) and come in proximity to another aircraft operating over-the-top, then descend back through the clouds without visual reference to the showline.

G. Unauthorized Military Demonstrations. When military aircraft conduct unauthorized aerobatic maneuvers--before, during, or after the waiver period--the inspector shall forward all pertinent information, including the call sign and type of aircraft, to the region at the earliest opportunity. The region shall transmit this information directly to AFS-800. AFS-800 will immediately notify the Pentagon of the occurrence. The district office should commence normal investigative procedures.

8. OBSERVANCE OF PARACHUTE JUMPS.

A. Location of Surveillance. The inspector has a choice of conducting the parachute demonstration jump surveillance at either the airport from which the aircraft departs, the landing area, or both, if they are in

proximity. This applies only to those events where the parachute demonstration jump is the only event. If the surveillance is conducted at the airport, the inspector should inspect both the aircraft and the parachutists' equipment.

B. Aircraft Used in Parachute Operations. Aircraft engaged in sport parachuting operations must be operated in accordance with the rules prescribed in part 91. In some cases, a large aircraft may be subject to the applicability of 14 CFR part 125. The operators of these aircraft must hold an operating certificate under part 125 or a letter of deviation authority permitting operation under part 91 for the purpose of intentional parachute jumping. (See chapter 73, Evaluate an Application for Deviation or Special Flight Authorization under FAR Part 125).

(1) Many aircraft involved in parachute jumping operations have been modified to accommodate the jumpers. These modifications may involve seatbelt attachments and arrangements, attachments to the structure, emergency exits, or the removal of the exit door. All of these alterations not authorized by the FAA-approved airplane flight manual require documentation of field approval by the FAA or a Supplemental Type Certificate (STC).

(2) Changes in the configuration of the aircraft must be reflected in the weight and balance documents.

C. Special Considerations.

(1) Inspector contact with skydiving activities is generally limited to monitoring aviation events where skydiving is involved, issuing authorizations for jumps into congested areas, and, when requested by ATC, providing input as to the safety of jumps into controlled airspace. The FAA policies with respect to skydiving have, in the past, been to regulate where necessary for the safety of persons not participating in the sport and to encourage self-regulation as necessary for the safety of the participants.

(2) It is important for inspectors to ensure that the actual jump reflects what has been authorized. Past accidents have brought to light incidents where events not enumerated in the authorization were a part of an approved jump. Because an authorization had been issued, tacit FAA approval was implied for areas that were not actually authorized.

(3) Further, there is concern that some of the skydiving activities that are taking place involve the operation of aircraft in a manner not provided for in the aircraft type certification and with no evaluation of the possible ramifications.

(4) Since the regulations involving aircraft modification are generally handled as airworthiness functions, and the majority of contacts with the skydiving community are made by operations inspectors, airworthiness inspectors should be involved where the proposed operations appear questionable.

(5) Inspectors, when conducting surveillance of an aviation event involving skydiving, should review the regulatory requirements and authorizations associated with skydiving activities, including the following:

(a) Aircraft modifications necessary to accommodate skydiving;

(b) Proper documentation of these modifications;

(c) Determination of approved number of occupants of a given model by type certificate or STC;

(d) Seatbelts and emergency exits; and

(e) Aircraft loading and weight and balance requirements.

9. ALTIMETER SETTINGS.

A. "Zero" Altitude Reference. Pilots performing aerobatics generally set the aircraft's altimeter to zero before takeoff. This eliminates the need for the pilot to account for terrain altitude in determining the aircraft's height above the ground.

B. Section 91.121. In many cases, inspectors have erroneously informed airshow performers that they must comply with § 91.121 (Altimeter Settings) while performing aerobatic routines.

(1) Section 91.121 is designed to provide a standard altitude reference for the purpose of maintaining a flight level or cruising altitude.

(2) Since aerobatic routines normally do not involve maintaining a flight level or a cruising altitude, operational safety is not compromised if local aerobatic flight is conducted under visual flight rules (VFR) using other than the altimeter references specified by § 91.121. However, the aircraft must depart from and land at the same airport.

C. Local Aerobatic Flights. Local aerobatic flights, as discussed above, should not be required to comply with the altimeter setting requirements for aircraft maintaining "flight levels" or "cruising altitudes" as per § 91.121.

10. AIRCRAFT MARKINGS. Title 14 CFR part 45, § 45.22(b), permits small antique aircraft (with any type of airworthiness certificate), large antique aircraft (with an experimental certificate based on the amateur-

built or exhibition nature of the aircraft), and all antique replicas (with experimental/exhibition or experimental/amateur-built certificates) to carry two-inch N-numbers instead of 12-inch numbers. Section 45.22 also states that the N-numbers must be located on both sides of the fuselage or vertical tail surface. Section 45.25 requires placement of N-numbers on both sides of the fuselage between the trailing edge of the wing and the leading edge of the horizontal stabilizer.

A. Owner's Petition. Aircraft owners, who are seeking to preserve the authentic, antique, or military paint schemes by locating the N-numbers beneath the horizontal stabilizer, have petitioned to determine the applicability of § 45.25 to such aircraft.

(1) The FAA Chief Counsel's office has reviewed the issue and has determined that the location requirements of § 45.25 do not apply to aircraft marked in accordance with § 45.22(b). That section specifically states that the aircraft described above do not have to comply with §§ 45.21 and 45.23 through 45.33.

(2) Under this interpretation, therefore, antique and antique replica aircraft which qualify to use two-inch numbers under § 45.22(b) may locate them anywhere on either side of the fuselage, including under the horizontal stabilizer.

(3) This interpretation does not affect the requirement in § 45.22(c) that these aircraft must carry 12-inch numbers located in accordance with § 45.25 when in an Air Defense Identification Zone (ADIZ) or Distant Early Warning Identification Zone (DEWIZ).

B. Section 45.23 Requirement. Section 45.23 requires limited or restricted category aircraft or experimental certificated aircraft to display on the aircraft near each entrance to the cabin or cockpit, in letters not less than two inches or more than six inches in height, the words "limited," "restricted," or "experimental," as the case may be.

11. U.S. REGISTERED CIVIL AIRCRAFT.

A. To perform in an airshow, a U.S. registered civil aircraft must hold an appropriate Certificate of Airworthiness issued by the FAA, be maintained in accordance with 14 CFR parts 21, 43, and 91, as required, and meet original type design or an approved altered condition that is safe for flight.

(1) Additionally, in accordance with § 91.1, all maneuvers performed at airshows shall be conducted in accordance with any operating or special limitations issued as part of the aircraft's Certificate of Airworthi-

ness, type certificate data sheet (TCDS), STC flight manual (FM), and/or letter of authorization (LOA).

(2) Most of these limitations are developed during the type certification (TC) process and in many cases can be found in the FM.

(3) Regarding some vintage, unique, replica, or foreign manufactured aircraft, information normally found in the FM may be minimal or nonexistent.

(4) IT IS INCUMBENT UPON AIRCRAFT OWNERS AND OPERATORS WHO CONDUCT AEROBATIC FLIGHT OPERATIONS TO BE KNOWLEDGEABLE ABOUT THE CERTIFICATION BASIS OF THEIR AIRCRAFT, AND HOW THE CERTIFICATION BASIS DEFINES WHICH FLIGHT OPERATIONS ARE AUTHORIZED. In some cases, this aircraft-specific information may only be available from the aircraft manufacturer. Aircraft type clubs and related organizations may be another source of this information, but their level of expertise may vary.

(5) The Experimental Aircraft Association (EAA) maintains a list of these organizations. Their address is Antique/Classic Type Clubs, EAA Aviation Center, P.O. Box 3086, Oshkosh, WI 54903-3086; phone number (414) 426-4800; e-mail address Vintage@eaa.org; web site <http://www.eaa.org>.

(6) Another source of information on airplane certification regulatory requirements is the FAA's Small Airplane Directorate, 1201 Walnut, Suite 900, Kansas City, MO 64106; phone number (816) 426-6937.

B. Airplanes.

(1) For the purpose of issuing a Certificate of Waiver or Authorization for an airshow, the following aircraft attitudes will be considered aerobatic flight:

(a) For civil turbojet/turboprop powered (primary power unit) airplanes, when the pitch angle exceeds a positive or negative 60° angle from the horizon, and/or when the bank angle diverges from level flight in excess of 60°.

(b) For all other aircraft, when the pitch angle exceeds a positive or negative 90° angle from the horizon, and/or when the bank diverges from level flight in excess of 90°.

(2) The regulations that set forth the certification basis for aircraft issued a standard U.S. Certificate of Airworthiness in the Normal, Utility, or Acrobatic Category have continually evolved and changed substantially from 1926 to today. Therefore, the need

for aircraft owners and operators to understand the certification basis of their aircraft cannot be overstressed.

(3) For vintage airplanes, Civil Air Regulations (CAR) used as the certification basis for airplanes certificated by the Department of Commerce, Bureau of Air Commerce, were written in a different manner than the generally restrictive nature of the current 14 CFR.

(a) CAR part 04 is the certification basis for airplanes receiving type-certification from November 7, 1937 to November 13, 1945.

(b) Before November 1, 1937, the certification basis for airplanes was Aeronautical Bulletin 7A which was even less definitive than the CAR.

(c) Certain vintage airplanes were type-certificated using CAR part 04 as the certification basis. At the time, the normal class was all that was available for airplanes over 1,000 pounds maximum weight. The classes in CAR part 04 are not comparable to categories described in 14 CFR part 23 today. These airplanes certificated in the normal class as defined in CAR § 04.01 may be authorized to conduct aerobatic flight operations. Airplanes certificated in the normal class under CAR part 04 were certificated to very nearly the same structural loads as Acrobatic Category aircraft type certificated under 14 CFR part 23 today.

(d) CAR § 04.2, Structural Loading Conditions, found in the initial version of CAR part 04 dated November 11, 1937 provided all of the loading conditions for the airplane structure. As an example, CAR part 04, § 04.2131, Condition I (positive high angle of attack), states that the factors given in table 04-1 and figure 04-3 shall be used. For this condition, the limit load factor is 5.33. This load factor corresponds to the current limit load factor of 6 for Acrobatic Category aircraft as stated in 14 CFR § 23.337(a). These structural loading conditions found in the first version of CAR part 04 remained unchanged in all subsequent revisions until CAR part 04 was recodified into CAR part 03 on November 13, 1945.

(e) Based on the above discussion, it would appear that unless specifically prohibited as indicated in the Aircraft Specification Sheet, TCDS, or STC the authorization to conduct aerobatic flight operations with airplanes certificated using Bulletin 7A or CAR part 04 as the certification basis is implied.

(4) Currently, small present day airplanes that are issued a Standard U.S. Certificate of Airworthiness in the Normal, Utility, or Acrobatic Category are

certificated in accordance with 14 CFR part 23 or CAR part 03, depending on the certification basis.

(a) Airplanes in the Normal Category are limited to maneuvers that do not exceed 60° of bank.

(b) Utility Category airplanes are authorized to conduct maneuvers that exceed 60° of bank, but may be approved to conduct spins.

(c) Acrobatic Category aircraft are authorized to conduct maneuvers without any restrictions, except those shown necessary as a result of certification flight testing.

(d) The FM of contemporary airplanes should contain sufficient information concerning authorized maneuvers and any limitations.

(5) Currently, aircraft that are issued a Primary Category Certificate of Airworthiness must conform to an approved primary, normal, utility, or acrobatic aircraft type design, or conform to sport plane certification standards which are similar to Utility Category standards.

(a) The certification basis for Primary Category aircraft can be 14 CFR part 23, CAR part 03, JAR/VLA, Sportplane, or any other custom-developed certification basis accepted by the FAA under Primary Category. Therefore, operators who perform inverted flight or spin maneuvers in airplanes that are issued a special Certificate of Airworthiness in the Primary Category must determine the ability of the airplane to safely perform the intended flight operation and ensure that the operation is conducted in accordance with any operating limitations issued by the FAA as part of the Certificate of Airworthiness.

(b) Additionally, any flight maneuver that exceeds the flight envelope demonstrated during TC flight testing may require the issuance of a special Certificate of Airworthiness in the Experimental Category or the issuance of an STC in accordance with part 21, subpart E. If these flight envelope limitations are not available in the FM or TCDS, information on these maneuver limitations can be obtained from the aircraft manufacturer.

(6) A Restricted Category Certificate of Airworthiness is issued for certain special purpose operations as described in § 21.25. Generally, participating in public, sporting aviation events such as airshows or air races are not one of the special purpose operations authorized by this rule. However, there have been some performing helicopters that have been issued a Restricted Category Certificate of Airworthiness.

(7) Generally, a Limited Category Certificate of Airworthiness is issued to a surplus aircraft of the

Armed Forces of the United States from the World War II era and certificated in accordance with § 21.189.

(a) The FAA may include operating limitations as part of the certificate in addition to any operating limitations described in the original military FM. For example, the P-51 Army Technical Orders AN-01-60JD-1 and AN-01-60JE-1 prohibit the aircraft from performing aerobatic maneuvers with fuel in the fuselage fuel tank.

(b) It is incumbent upon the owner/operator of the airplane to determine the ability of the airplane to safely perform any intended flight operation, to ensure the flight operation is conducted in accordance with any operating limitations described in the original military FM, and in accordance with any operating limitations issued by the FAA as part of the Certificate of Airworthiness.

(8) Experimental Category Certificates of Airworthiness are issued for certain purposes as described in § 21.191.

(a) To perform at airshows, an experimental Certificate of Airworthiness should be issued for the purpose of exhibition.

(b) To participate in closed course air racing, an experimental Certificate of Airworthiness should be issued for the purpose of air racing.

(c) The FAA may include operating limitations as part of the Certificate of Airworthiness in addition to any operating limitations described in the original military FM for surplus aircraft of the Armed Forces of the United States, if appropriate. For example, the P-51 Army Technical Orders AN-01-60JD-1 and AN-01-60JE-1 prohibit the aircraft from performing aerobatic maneuvers with fuel in the fuselage fuel tank.

(d) It is incumbent upon the owner/operator of the airplane to determine the ability of the airplane to safely perform any intended flight operation, and to ensure the flight operation is consistent with the purpose for which the certificate was issued, and conducted in accordance with any operating limitations issued by the FAA as part of the Certificate of Airworthiness, and if appropriate, any operating limitation described in the original military FM.

C. Gliders.

(1) For the purpose of issuing a Certificate of Waiver or Authorization for an airshow, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by a civil glider is considered aerobatic flight and must be addressed in the Certificate of

Waiver or Authorization with appropriate special provisions.

(2) In accordance with § 21.17 (b), for special classes of aircraft for which airworthiness standards have not been issued in 14 CFR, the applicable TC requirements will be other airworthiness criteria as the FAA may find applicable to provide an equivalent level of safety.

(a) The current edition of AC 21.17-2, Type Certification-Fixed Wing Gliders (Sailplanes) Including Powered Gliders (current edition), defines gliders as just such an example of a special class of aircraft.

(b) The FAA has determined that the criteria of Joint Airworthiness Requirements (JAR)-22 for Sailplanes and Powered Sailplanes (current edition) provides an acceptable level of safety and is appropriate for use as the certification basis for gliders.

(c) JAR 22.3 sets forth two categories for gliders, Utility and Aerobatic. Gliders certificated in either category in accordance with JAR-22 will have information in the FM and cockpit placards that prescribe certain "permitted maneuvers" that were demonstrated during TC flight testing.

(d) After TC, to conduct any maneuver that exceeds the flight envelope of these "permitted maneuvers" may require the issuance of a special Certificate of Airworthiness in the Experimental Category or the issuance of an STC in accordance with part 21, subpart E.

(e) If these "permitted maneuvers" and/or other limitations on maneuvers are not available in the FM, cockpit placards, or TCDS, information on these maneuver limitations can be obtained from the aircraft manufacturer.

D. Small Agricultural Airplanes.

(1) For the purpose of issuing a Certificate of Waiver or Authorization for an airshow, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by an agricultural aircraft is considered aerobatic flight and must be addressed in the Certificate of Waiver or Authorization with appropriate special provisions.

(2) In accordance with § 21.25 (a) (1), small agricultural airplanes are subject to the same TC requirements as a part 23 Normal Category airplane, except for those requirements that are found to be inappropriate for the special purpose operation. As an

example, spin testing may not be required for certification of a small agricultural airplane.

(a) Additionally, no U.S. registered small agricultural airplane with a Certificate of Airworthiness issued in the Restricted Category is authorized to conduct inverted flight. Therefore, small agricultural airplane operators who perform inverted flight or spin maneuvers shall ensure that the aircraft has a valid special Certificate of Airworthiness issued in the Experimental Category for the purpose of exhibition or an appropriate STC.

(b) Additionally, any flight maneuver that exceeds the flight envelope demonstrated during TC flight testing may require the issuance of a special Certificate of Airworthiness in the Experimental Category or the issuance of an STC in accordance with part 21, subpart E.

(c) If these flight envelope limitations are not available in the FM or TCDS, information on these maneuver limitations can be obtained from the aircraft manufacturer.

E. Rotorcraft. The following guidance is applicable to both helicopters and gyro copters.

(1) For the purpose of issuing a Certificate of Waiver or Authorization for an airshow, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by a rotorcraft is considered aerobatic flight and must be addressed in the Certificate of Waiver or Authorization with appropriate special provisions.

(a) Agility maneuvers (less than 90° of pitch and/or bank) performed by helicopters at airshows also require consideration in the Certificate of Waiver or Authorization.

(b) Any civil rotorcraft act that includes a rotorcraft external-load as defined in 14 CFR part 1 will require certification in accordance with, and must meet the operating requirements of, part 133.

(2) No U.S. registered civil rotorcraft with a Certificate of Airworthiness in the Standard Category is authorized to conduct inverted flight. Therefore, rotorcraft operators who perform inverted flight maneuvers shall ensure that the aircraft has a valid special Certificate of Airworthiness issued in the Experimental Category for the purpose of exhibition or an appropriate STC.

(a) To conduct any flight maneuver that exceeds the flight envelope demonstrated during TC flight testing may require the issuance of a special Certificate of Airworthiness in the Experimental

Category or the issuance of an STC in accordance with part 21, subpart E.

(b) Some rotorcraft may have an FM that prescribes limitations on aircraft attitude. If these limitations are not available in the FM or TCDS, information on these maneuver limitations can be obtained from the aircraft manufacturer.

F. Foreign Registered Civil Aircraft.

(1) In accordance with 14 CFR part 375, subpart D, a foreign aircraft permit is not required for foreign aircraft entering the United States for the purpose of performing in an airshow.

(2) For the purpose of issuing a Certificate of Waiver or Authorization for an airshow, any inverted flight maneuver or pitch and/or bank angle greater than 90°, 60° for jet powered airplanes, conducted by a foreign registered aircraft is considered aerobatic flight and must be addressed in the Certificate of Waiver or Authorization with appropriate special provisions.

(3) In accordance with Chapter V of the Convention on International Civil Aviation, part 375, subpart B, and § 91.203(a)(1), no person may operate a civil aircraft of foreign registry unless it contains current certificates of registry and airworthiness (standard) issued or rendered valid by the country of registry, or a special flight authorization issued in accordance with § 91.715.

(4) In accordance with § 91.9, all maneuvers performed at airshows shall be conducted in accordance with any operating or special limitations issued as part of the aircraft's Certificate of Airworthiness, or

other certification and/or airworthiness documents issued or rendered valid by the country of registry.

G. Military Aircraft. State (military) aircraft from foreign countries that perform in airshows in the United States receive a diplomatic clearance from the U.S. Department of State to operate in the National Airspace System (NAS).

(1) This clearance is obtained by applying to the appropriate military attache in the U.S. Embassy in the country of origin. Generally, these authorizations are not subject to review by FAA personnel.

(2) The airworthiness standards and operating limitations for both U.S. and foreign military aircraft are determined by the appropriate military command in the country of origin and generally are not subject to review by civil aviation authorities.

H. Ultralight Vehicles.

(1) For the purpose of issuing a Certificate of Waiver or Authorization for an airshow, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by an ultralight vehicle that meets the applicability section of § 103.1 is considered aerobatic flight and be should addressed in the Certificate of Waiver or Authorization with appropriate special provisions. There are no certification or airworthiness standards for ultralight vehicles.

(2) In accordance with FAA policy, the operator of the vehicle should provide the FAA with a statement of determination that the vehicle and operator are able to conduct the proposed demonstration without creating a hazard to persons and property on the surface. This statement should contain a summary of how the determination was made.

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[PAGES 50-11 THRU 50-14 RESERVED]

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in Title 14 of the Code of Federal Regulations (14 CFR) parts 91 and 105, and Federal Aviation Administration (FAA) policies and qualification as an aviation safety inspector (operations).

(1) The inspector-in-charge (IIC) of surveillance must have completed OJT and participated in the issuance of a certificate of waiver or authorization and the surveillance of three aviation events with a senior inspector.

(2) For aviation events where a military jet aerobatic demonstration team will perform, the inspector must have satisfactorily completed OJT in the issuance of the waiver or authorization (including the site feasibility study and the pre-season evaluation meeting) and surveillance of an airshow in which a North American military jet aerobatic team performed.

B. Coordination. This task requires coordination with the airworthiness unit and air traffic.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, 91, 103, 105, and 125
- Advisory Circular (AC) 91-45, Waivers: Aviation Events (current edition)
- AC 103-7, The Ultralight Vehicle
- AC 105-2, Sport Parachute Jumping (current edition)
- AC 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulations Part 125
- Order 8700.1, chapter 49, Issue a Certificate of Waiver or Authorization for an Aviation Event

B. Forms.

- FAA Form 7711-1, Certificate of Waiver or Authorization
- FAA Form 7711-2, Certificate of Waiver or Authorization Application
- FAA Form 8000-36, PTRS Transmittal Form

C. Job Aids.

- Sample letters and figures

3. PROCEDURES.

A. IIC Pre-Surveillance Activities.

(1) Review FAA Form 7711-1. Become familiar with the General and Special Provisions, the Schedule of Events, and the regulations that were waived. For balloon competitions, review the event manual.

(2) Assemble at least the following information to bring along on surveillance:

(a) FAA Form 7711-1 issued for this aviation event.

(b) Information and documents for accident or incident investigation.

(c) Appropriate sections of the regulations.

(d) Any other equipment or information considered necessary.

(3) Determine the equipment required to conduct the surveillance; for example, VHF radio, FM radio, camera, etc.

(4) If an FAA team is assigned for surveillance, brief each inspector on his/her duties and responsibilities. Emphasize that all contacts with the sponsor, problems with performers, etc., must be coordinated with the IIC.

(5) No sooner than 48 hours before the event, contact the appropriate Flight Service Station to ensure that a NOTAM, if required by the Certificate of Waiver or Authorization, has been issued.

B. PTRS. Open PTRS file.

C. FAA Introduction. At the site of the aviation event, introduce all members of the FAA team to the holder of the waiver or authorization, his/her representatives, and other key personnel.

D. Preshow Briefing. Attend and observe (all FAA surveillance personnel) the preshow briefing (see figure 50-3).

(1) Ensure that all performers sign the waiver or authorization on the sign-in sheet, attesting that they will comply with all the provisions of the waiver or authorization. (North American military team leaders/representatives may sign for the entire team.) (See figure 50-5.)

(2) If performers list credentials and aircraft information on a sign-in sheet, spot-check a sampling for accuracy, as required. Obtain the original copy of the sign-in sheet for the file.

NOTE: To facilitate the gathering of information, the event sponsor may send a copy of the sign-in sheet to performers in advance of the event.

E. Inspect Airman Certificates. As a minimum, ensure that the participating pilots have in their possession:

(1) A valid Pilot Certificate, except operators of ultralight vehicles.

(2) If required, a valid letter of authorization in lieu of type rating.

(3) A current medical certificate, except glider and balloon pilots and operators of ultralight vehicles.

(4) A current Statement of Acrobatic Competency, as required (see figure 50-4).

(5) A valid letter of authorization to conduct maneuvers at the crowd, if required.

(6) Formation flying credentials, as required.

NOTE: Possession of such credentials does not require being carried on the persons during the performance.

F. Parachutist Qualifications. If last minute substitutions are made to the list of qualified parachutists provided in the application for the authorization, check the parachutists' qualifications.

G. Inspect Participating Aircraft. (See section 1, paragraph 4C(2)(i)). Inspect the following:

(1) The aircraft's general condition.

(2) The aircraft airworthiness and registration certificates.

(3) The operating limitations associated with Special Airworthiness Certificates.

(4) The Operating Certificate or Letter of Deviation Authority for large aircraft used in sport parachuting.

(5) The modifications to aircraft that accommodate sport parachutists and documentation of field approval by the FAA, or an STC.

(6) Emergency parachute repack date, if installed within the previous 120 days (§ 91.307).

H. Inspect Parachutists' Equipment. Inspect parachutists' equipment for the following:

(1) Determine if the main parachute has been packed, usually by the jumper, within the previous 120 days (§ 105.43(a)(1)).

(2) Determine that the auxiliary parachute was packed and sealed by a certificated and appropriately rated rigger (§ 105.43(a)(2) and 14 CFR part 65, subpart F).

(3) Determine that the equipment has been manufactured under a type certificate or technical standard order or is a personnel-carrying military parachute (§ 91.307(e)).

I. Balloon Competitions.

(1) Determine that the designated spectator area for balloon events is maintained at a minimum of a 200-foot radius away from the designated or declared goal or target.

(2) Ensure that the sponsor can keep the target area clear of all except designated event personnel.

(3) Ensure all required participants attend pre-event briefing.

J. Ensure Compliance with Terms of Waiver or Authorization. Inspect the event site for compliance with the special provisions of the waiver or authorization.

(1) Include, but do not limit the inspection to, the showline, physical barriers, policing of the spectator area(s), and areas where any aircraft operate.

(2) Inspect the control point.

(3) Ensure communications capability with participating aircraft, security, emergency equipment, and a public address system for spectators. Also ensure that inspectors have continuous access to the control point.

(4) If a discrepancy is noted, immediately bring it to the attention of the holder of the Certificate of Waiver or Authorization or their designated representative.

K. Observe Aviation Event. Ensure that all provisions of the waiver or authorization and special provisions are adhered to in all cases.

(1) If a minor problem is noted, discuss the problem with the appropriate individual during the debriefing. For example:

(a) Personnel for policing were inadequate to keep spectators from intruding too close to the showline. Spectators were immediately escorted from the area, and more security personnel were assigned to the area.

(b) Insufficient time between performances.

(2) If you observe an incident that is in noncompliance with the terms of the waiver or authorization or the regulations, advise the waiver or authorization holder and, if necessary, the performer of the actions necessary to regain compliance. For example:

(a) Performing aerobatics inside the showline.

(b) Performing maneuvers not provided for in the waiver or authorization.

(3) If a serious safety problem is noted, immediately bring it to the attention of the holder of the Certificate of Waiver or Authorization or a designated representative.

(a) Observe actions taken by the holder of the waiver or the representative to correct the safety problem.

(b) If the problem is not or cannot be corrected, cancel or delete any or all events that affect the safety of persons on the ground or in the air.

(4) Note any discrepancies and the action taken in the comment portion of the PTRS transmittal form.

L. Debrief. After conclusion of the aviation event, discuss with the holder of the Certificate of Waiver or Authorization, or a representative, and the performers:

- (1) Areas of noncompliance.
- (2) Safety-related problems.
- (3) Aerobatic competency.
- (4) Opportunities for improvement.

(5) If a similar event is planned for next year, follow up with a letter outlining areas that need improvement.

(6) If no problems were encountered, apprise ~~the sponsor that the show went well.~~

M. Office File. Prepare an office file consisting of the following:

- (1) FAA Form 7711-1.
- (2) Record of meetings and telephone conversations.
- (3) The aviation event job aid.
- (4) Performer sign-in sheet.

N. PTRS. Make appropriate PTRS entry.

4. TASK OUTCOMES. The completion of this task results in a record for the district office file on the outcome of the surveillance.

5. FUTURE ACTIVITIES.

A. Future surveillance of recurring or annual aviation events.

B. Site feasibility evaluation for future or recurring aviation events.

C. Enforcement investigation if areas of noncompliance with the waiver or authorization or the regulations are noted and enforcement action is required to achieve future compliance.

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[PAGES 50-19 THRU 50-22 RESERVED]

FIGURE 50-1
FAA FORM 7711-2, CERTIFICATE OF WAIVER OR AUTHORIZATION APPLICATION

No certificate may be issued unless a completed application form has been received (14 C.F.R. §§ 101 and 105).

US Department of Transportation Federal Aviation Administration		Form Approved: O.M.B. No. 2120-0027 APPLICANTS - DO NOT USE THESE SPACES	
APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION		Region GREAT LAKES	Date MARCH 13, 1996
Action <input checked="" type="checkbox"/> As Per 7711-1 <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved - Explain under "Remarks"			
Signature of authorized FAA representative James E. Hightower			

INSTRUCTIONS

Submit this application in triplicate (3) to any FAA Flight Standards district office.

Applicants requesting a Certificate of Waiver or Authorization for an aviation event must complete all the applicable items on this form and attach a properly marked 7.5 series Topographic Quadrangle Map(s), published by the U.S. Geological Survey (scale 1:24,000), of the proposed operating area. The map(s) must include scale depictions of the flightlines, showlines, race courses, and the location of the air event control point, Police dispatch, ambulance, and fire

fighting equipment. The applicant may also wish to submit photographs and scale diagrams as supplemental material to assist in the FAA's evaluation of a particular site. Application for a Certificate of Waiver or Authorization must be submitted 45 days prior to the requested date of the event.

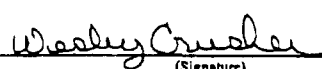
Applicants requesting a Certificate of Waiver or Authorization for activities other than an aviation event will complete items 1 through 8 only and the certification, item 15, on the reverse.

1. Name of organization HIGH ON KALAMAZOO, INC.		2. Name of responsible person JOHN M. ELLIS	
3. Permanent mailing address	House number and street or route number 5605 PORTAGE ROAD	City KALAMAZOO	State and ZIP code MI 49002
4. FAR section and number to be waived 91.117 (a & b), 91.303 (c, d & e), 91.119 (b & c), 91.127, 91.129, 105.15			
5. Detailed description of proposed operation (Attach supplement if needed)			
6. Area of operation (Location, altitudes, etc.) KALAMAZOO COUNTY AIRPORT 10,000' AND BELOW, RADIUS OF TEN (10) NAUTICAL MILES.			
7a. Beginning (Date and hour) APPLICANT MAY USE ATTACHMENT		7b. Ending (Date and hour) APPLICANT MAY USE ATTACHMENT	

8. Aircraft make and model (a)	Pilot's Name (b)	Certificate number and rating (c)	Home address (Street, City, State) (d)
APPLICANT MAY USE ATTACHMENT			

FAA Form 7711-2 (8-88) Supersedes Previous Edition

FIGURE 50-2
FAA FORM 7711-1, CERTIFICATE OF WAIVER OR AUTHORIZATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION	
CERTIFICATE OF WAIVER OR AUTHORIZATION	
ISSUED TO	HIGH ON KALAMAZOO, INC. JOHN M. ELLIS
ADDRESS	5605 PORTAGE ROAD KALAMAZOO, MICHIGAN 49002
This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.	
OPERATIONS AUTHORIZED AEROBATIC DEMONSTRATIONS AT THE KALAMAZOO COUNTY AIRPORT, KALAMAZOO, MICHIGAN, WITHIN A FIVE (5) NAUTICAL MILE RADIUS OF THE CENTER OF THE AIRPORT FROM THE SURFACE TO 15,000 MSL, EXCLUDING THE AIRSPACE ABOVE SPECTATORS OR CONGESTED AREAS. PARACHUTE JUMPING AT THE KALAMAZOO COUNTY AIRPORT, KALAMAZOO, MICHIGAN, WITHIN A TWO (2) NAUTICAL MILE RADIUS OF THE CENTER OF THE AIRPORT FROM THE SURFACE TO 15,000 FEET MSL, JUMPS OVER OR INTO CONGESTED AREAS OR OPEN AIR ASSEMBLY OF PERSONS ARE AUTHORIZED.	
LIST OF WAIVED REGULATIONS BY SECTION AND TITLE SEE ATTACHMENT A	
STANDARD PROVISIONS	
1. A copy of the application made for this certificate shall be attached to and become a part hereof. 2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations. 3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein. 4. This certificate is nontransferable.	
NOTE—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.	
SPECIAL PROVISIONS	
PARACHUTE SPECIAL PROVISIONS NOS. 1 THRU 13. "Sec Attached" <input checked="" type="checkbox"/> Special Provisions Nos. <u>1</u> to <u>26</u> inclusive, are set forth on the reverse side hereof.	
This certificate is effective from <u>1145EDT 06/09/96</u> to <u>1600EDT 06/09/96</u> <u>1245EDT 06/10&11/96</u> to <u>1730EDT 06/10&11/96</u> , inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.	
BY DIRECTION OF THE ADMINISTRATOR	
<u>Great Lakes</u> (Region)	 (Signature)
<u>March 28, 1996</u> (Date)	Principal Operations Inspector (Title)

FAA Form 7711-1 (7-74)

FIGURE 50-3 PRESHOW BRIEFING GUIDE

AVIATION EVENT PRESHOW BRIEFING GUIDE

WHO SHOULD ATTEND:**ALL PERFORMERS:**

- Airshow Pilots
- Tow / Jump Aircraft Pilots
- Skydivers
- Military Flight Demo Pilots
- Air & Ground Pyrotechnic Technicians
- Jet Vehicle Drivers
- Narrator(s)
- Remotely Deployed Aircraft Pilots (via telecon)
- At least one (1) representative for each military team

KEY OPS / SUPPORT PERSONNEL:

- Air Boss
- Air Traffic Control
- Fire Chief / CRS
- EMS Helicopter
- Smoke Oil / Refueling Chief
- Aircraft Marshalls Chief
- Maintenance Chief
- Crowd Control

FAA (Or Assigned) MONITOR:**WEATHER BRIEFER:**

AIRSHOW DIRECTOR / EVENT SPONSOR: (Including that person named on the Waiver as being "responsible to ensure safety of the event")

WHO SHOULD NOT ATTEND:

- Pets
- Individual Sponsors
- Media Representatives
- Spouses
- Children
- Relatives / Friends
- Anyone not directly associated with the performance

FIGURE 50-3 PRESHOW BRIEFING GUIDE - Continued

AVIATION EVENT PRESHOW BRIEFING GUIDE - Continued

BRIEFING:

ROLL CALL: Those not attending the briefing MAY NOT participate in this performance!

INTRODUCE KEY OFFICIALS:

TIME HACK:

CURRENT WEATHER AND FORECAST: (Include regional and national weather by quadrants on the last day, for departing aircraft)

REVIEW NOTAM(S):

REVIEW WAIVER AND SPECIAL PROVISIONS:

REVIEW AREA MAP:	Hold Points / Turn Directions Altitudes Noise Abatement Procedures Sensitive Areas Special Use Airspace Remote Recovery Airports Obstructions Controlled / Emergency Bail Out / Ditching Procedures
------------------	---

AIRPORT STATUS:	Airspace Runways In Use Facilities Arresting Cables Traffic Patterns
-----------------	--

AIRSHOW LAYOUT:	Showlines Spectator Areas (Primary / Secondary) Ground Based Pyro Hazards Aircraft Parking Taxi Routes CRS Runway Watch Locations Unique Local Items / Conditions
-----------------	--

FIGURE 50-3
PRESHOW BRIEFING GUIDE - Continued

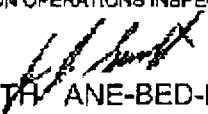
AVIATION EVENT PRESHOW BRIEFING GUIDE - Continued

COMMUNICATIONS:	Primary / Backup / Discrete Tower / UNICOM Any Aircraft W/O Radios? - Procedures Transponders
SPECIALTY BRIEFINGS:	Warbird Formation Fuel / Smoke Oil Marshalls CRS Runway Watch Maintenance Pyro Announcer(s)
EMERGENCY PROCEDURES:	Comm. Failure (Aircraft / Ground) Stuck Mike Procedures NORDO Procedures Ground / In-flight Emergencies Runway Closures Hold / Divert Locations Recall / Stop Show / Divert Procedures Aircraft in Pyro Area Deteriorating Weather Procedures
PERFORMANCE SAFETY:	Stall Speeds vs. "G" Load vs. Density Altitude Personal Physical Condition (Rest, Mental State, Dehydration, etc.) Minimum Altitude(s) = Hard Deck Showline = Do Not Cross
DISTRIBUTE / REVIEW FLYING SCHEDULE: Act-by-Act	
ADMINISTRATIVE NOTICES:	
QUESTIONS? - COMMENTS?	
RESOLVE ALL CONFLICTS!	
ALL PERFORMERS MUST SIGN THE WAIVER AND/OR PARTICIPANTS BRIEFING SIGNATURE DOCUMENT!	

(Note: This guide is general in nature and should be tailored for each event as necessary.)

FIGURE 50-4
FAA FORM 8710-7, STATEMENT OF AEROBATIC COMPETENCY

FRONT

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION STATEMENT OF AEROBATIC COMPETENCY	
PILOT	
J. J. JONES	
TYPE CERTIFICATE/NUMBER	
COMMERCIAL 1234567	
ISSUANCE DATE	EXPIRATION DATE
03-30-96	03-31-97
GENERAL AVIATION OPERATIONS INSPECTOR (Signature)	
 J. J. SMITH ANE-BED-FSDO	

FAA Form 8710-7 (5-78)

BACK


MANEUVER LIMITATIONS	
NONE	
ALTITUDE LIMITATIONS	AUTHORIZED AIRCRAFT
LEVEL II	PITTS SPECIAL
I understand that this statement of competency does not authorize deviation from FAR 91 except as defined by waiver thereto, or to the terms of Special Provisions contained in any waiver to FAR 91.	
PILOT (Signature)	
	

FIGURE 50-5 **SAMPLE BRIEFING SIGNATURE PAGE**

**I have read and/or been briefed on the Certificate of Waiver or Authorization
and all its special provisions and fully understand
the procedures, requirements and limitations of this document.**

PARTICIPANTS: (Pilots)*

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT "TEAM" NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT "TEAM" NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT "TEAM" NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

FIGURE 50-5
SAMPLE BRIEFING SIGNATURE PAGE - Continued

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT TEAM NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT TEAM NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT TEAM NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

SIGNATURE: CERT. # & TYPE:	MEDICAL CLASS: DATE: / /	BFR DATE: / /	PLEASE PRINT NAME: PLEASE PRINT TEAM NAME:	ACFT. TYPE: REG. #: CERT. OF AIRWORTH TYPE:
ADDITIONAL INFORMATION: Do you have any of the following: 1. LOA in lieu of type rating: Yes - No 2. LOA for maneuvers at the crowd: Yes - No 3. Non-aerobatic formation card: Yes - No	DATE OF LAST PERFORMANCE OR PRACTICE: / /	DO YOU HAVE: Drop tanks? Y - N Ejection Seats? Y - N	ACE CARD DATE: / / LIMITATIONS / AUTHORIZATIONS:	EMERGENCY PARACHUTE REPACK DATE: / /

FIGURE 50-5
SAMPLE BRIEFING SIGNATURE PAGE - Continued

**I have read and/or been briefed on the Certificate of Waiver or Authorization
and all its special provisions and fully understand
the procedures, requirements and limitations of this document.**

PARTICIPANTS: (Skydivers)*

SIGNATURE: FULL NAME (PRINTED):	USPA RATING: (Circle One) C D PRO-RATING DATE: / /	MAIN PARACHUTE REPACK DATE: / / TYPE:	AUXILIARY PARACHUTE REPACK DATE: / / TYPE:
SIGNATURE: FULL NAME (PRINTED):	USPA RATING: (Circle One) C D PRO-RATING DATE: / /	MAIN PARACHUTE REPACK DATE: / / TYPE:	AUXILIARY PARACHUTE REPACK DATE: / / TYPE:
SIGNATURE: FULL NAME (PRINTED):	USPA RATING: (Circle One) C D PRO-RATING DATE: / /	MAIN PARACHUTE REPACK DATE: / / TYPE:	AUXILIARY PARACHUTE REPACK DATE: / / TYPE:
SIGNATURE: FULL NAME (PRINTED):	USPA RATING: (Circle One) C D PRO-RATING DATE: / /	MAIN PARACHUTE REPACK DATE: / / TYPE:	AUXILIARY PARACHUTE REPACK DATE: / / TYPE:
SIGNATURE: FULL NAME (PRINTED):	USPA RATING: (Circle One) C D PRO-RATING DATE: / /	MAIN PARACHUTE REPACK DATE: / / TYPE:	AUXILIARY PARACHUTE REPACK DATE: / / TYPE:
SIGNATURE: FULL NAME (PRINTED):	USPA RATING: (Circle One) C D PRO-RATING DATE: / /	MAIN PARACHUTE REPACK DATE: / / TYPE:	AUXILIARY PARACHUTE REPACK DATE: / / TYPE:

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CHAPTER 115. INTRODUCTION TO PART 137 RELATED TASKS

1. AGRICULTURAL AIRCRAFT OPERATIONS. Title 14 of the Code of Federal Regulations (14 CFR) part 137 is applicable to all operators conducting agricultural aircraft operations. The definition of the term agricultural aircraft operation in 14 CFR part 137 § 137.3 includes forest fire-fighting activities, e.g., fire bombers or tankers. Anyone conducting such activities is required to obtain or have an Agricultural Aircraft Operator Certificate. The exceptions are certificated external-load operators dispensing only water and public aircraft (defined in 14 CFR part 1).

2. PUBLIC EMERGENCIES. Title 14 CFR § 137.1 (b) allows certificated agricultural operators to deviate from part 137 for relief and welfare activities during public emergencies.

A. Definition of Public Emergency. The term public emergency as used in part 137 means an emergency requiring relief in the public interest. The emergency is of such magnitude that if immediate action were not taken, life, property, or the economic welfare of a substantial portion of a population or a significant geographic area would be jeopardized by the circumstances of that emergency. The determination of a public emergency is made by an agency of the U.S., a state, or local government. Any situation which is solely a matter of convenience or economic advantage to the operator is not deemed to be a public emergency.

B. Deviation from part 137 in Event of Public Emergency. If an operator deviates from part 137, he or she shall complete the report required by 14 CFR § 137.1(c).

3. DEFINITION OF AGRICULTURAL AIRCRAFT OPERATION. An agricultural aircraft operation means the operation of an aircraft for the purpose of dispensing any economic poison; dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control; or engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation.

A. Economic Poisons. An economic poison is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, weeds, viruses, other forms of plant or animal life, and anything declared by the Secretary of Agriculture to be a pest. Viruses on or in living man or other animals are excepted. Also, an economic poison is any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

B. Live Insects. The dispensing of live insects is not included in this definition.

4. MINIMUM EQUIPMENT LIST (MEL).

A. Most manufacturers of restricted category aircraft used in agricultural operations have not developed or requested approval for a Master MEL (MMEL). Operators of such aircraft are limited in the choice of documents for such aircraft; however, an operator of a single-engine turbine-powered agricultural aircraft may use the generic MMEL shown in the MMEL sub-system. Operators who may wish to use this document will be required to develop a usable MEL for their own use based on the generic format, providing "M" and "O" items that they develop for their own operation.

B. No provisions are currently listed in part 137 for the use of an MEL by part 137 operators. Operations inspectors may follow the MEL approval process for part 137 operators that is used for 14 CFR part 91 operations (i.e. approval of an MMEL for use as an MEL by means of a letter of authorization). When Operations Specifications Subsystem (OPSS) are fully developed for part 137 operators, those documents will reflect the MEL authorization and use.

5. PESTICIDE HOTLINE. The following hotlines are available for answering pesticide questions:

A. The National Pesticide Telecommunications Network operates a toll-free hotline, 1-800-858-PEST, which is staffed 7 days a week, from 6:30 a.m. to 4:30 p.m., PST. Qualified personnel are available to answer questions about pesticides. Information can be obtained about treatment by a physician after contamination or suspected contamination. The

location of the nearest poison control center, clean-up of a pesticide spill, and other related information is also available on the Internet at www.ace.orst.edu/info/nptrn.

B. CHEMTREC (Chemical Transportation Emergency Center) offers a 24 hours a day, seven days a week emergency phone service. In the event of an incident or accident involving pesticides, CHEMTREC is able to provide emergency response information pertaining to chemical spills. In emergency situations, call 1-800-424-9300. For non-emergency, general information or referrals, call 1-800-262-8200. Non-emergency telephones are staffed from 9:00 a.m. - 6:00 p.m., EST, Monday through Friday. They also maintain a web site at www.chemtrec.org.

6. COORDINATION WITH OTHER AGENCIES. The application of economic poisons, either by surface vehicle or aerial applicator involves regulation by federal, state, and local authorities.

A. Federal Authority. At the federal level, there are the U.S. Department of Agriculture and the Environmental Protection Agency (EPA), and in cases involving national parks or preservations, the Department of Interior.

B. State Authority. Additionally, each state has requirements for the purchase, application, and disposal of chemicals used in agricultural operations. Each state has a testing and licensing requirement that each pesticide applicator must undergo before being allowed to operate within that state. This test may be administered by the state lead agency (usually the Department of Agriculture).

C. Inspector Concerns. The major concern of the inspector is in the area of flight operations associated with application of economic poisons. It is impractical for each inspector to become thoroughly familiar with all facets of agrichemical application and regulation.

(1) Questions concerning the handling, mixing, application ratios, or expiration dates of specific chemicals should be addressed to the state agency governing these areas.

(2) Federal Aviation Administration (FAA) inspectors should become familiar with the personnel responsible for operation and regulation of the Federal or State agencies who work with aerial application of chemicals. The expertise of these individuals will often assist the inspector in the certification, inspection, and surveillance of agricultural aircraft operators.

(3) All economic poisons are required to have a label. If an inspector encounters an economic poison during an accident investigation or an inspection, he or she can obtain important information from that label, including recommended container disposal, name of the chemical company, etc.

7. OPERATING RULES. Although operating rules for agricultural aircraft are specified in subpart C of part 137, the following are some additional considerations.

A. Shoulder Harness. During inspection for initial certification, the shoulder harness specified in 14 CFR § 137.31 (b) should be inspected for proper installation by an airworthiness inspector.

B. Violations of §§ 137.37 and 137.39. In cases involving alleged violations of §§ 137.37 and 137.39, the inspector should first seek the assistance of the state agriculture authority in establishing proof, such as residue testing, of such violation. The inspector could alternatively seek assistance from the county agent or equivalent representative of the U.S. Department of Agriculture, or the EPA. In certain violation cases involving alleged injury or hazard to the health of persons, assistance should be requested from the proper authorities.

C. Personnel Duties and Responsibilities.

Personnel directly involved with agricultural aircraft operations (flight and ground (loader) crew members) should be informed of their duties when performing agricultural operations. A record of each crew member's duty assignment, date of assignment (or termination) to duty, and a signed statement by the crewmember that they have been advised of their duties will show compliance with the requirements of § 137.41 (a).

D. Proof of Property Interest. Should a question arise concerning whether or not the private agricultural aircraft operator owns or holds a lease on property where he or she is conducting agricultural aircraft operations, the operator should be required to show the deed or agricultural use lease pertaining to the property where the application work is performed.

(1) The term "property interest in the crop" means bona fide legal interest, not one which was created for the purpose of avoiding the requirements of part 137. For example, a tenant farmer living on rented land, growing the crop and sharing the proceeds with

the owner, would normally have a bona fide property interest in the crop.

(2) For the purposes of this 14 CFR, any property interest should be evidenced by a legal, written instrument.

E. Authorization from Air Traffic Control (ATC).

When conducting dispensing or other agricultural operations (not including flights to and from a dispensing area) within the lateral boundaries of a surface area of Class D airspace designated for an airport, prior authorization must be obtained by contacting the ATC facility by aircraft radio, in person, or by telephone for receipt of the authorization.

F. Deviation from Airport Traffic Patterns. Pilots of agricultural aircraft may deviate from airport traffic patterns with the authorization of the control tower. At airports without control towers, the pilot may deviate from the traffic pattern if:

(1) Prior verbal coordination is made with the airport management. Written confirmation is not required.

(2) Deviations from the traffic pattern must be limited to agricultural aircraft operations.

(3) Landings and takeoffs should be made from runways or other areas of the airport so designated by airport management.

(4) The aircraft must at all times remain clear of and give way to aircraft conforming to the traffic pattern.

G. Minimum Safe Altitudes - Other Than Congested Areas. Title 14 CFR § 137.49 permits the operator to operate an aircraft in dispensing operations contrary to 14 CFR part 91 § 91.119 (Minimum safe altitudes: General), provided such operations are conducted without creating a hazard to persons or property on the surface and are in conjunction with aerial application activities. However flights between dispensing operations must comply with 14 CFR § 91.119. For example, the pilot of an agricultural aircraft dispenses an economic poison on a field adjacent to a farmhouse. The pilot may operate less than 500 feet above the surface or closer than 500 feet to the house provided the house or its occupants are not exposed to hazard from the aircraft or the chemicals.

H. Considerations for Congested Area Determination. The term congested area has been applied on a case by case basis since it was first used. No precise mathematical or geographic definition has been developed. The rule is clear that the congested area must be an area of a city, town, or settlement. However, some guidelines have been developed to assist in interpretation:

(1) The purpose of the rule is to provide minimum safe altitudes for flight and to provide adequate protection to persons on the ground. The following areas were determined to be congested by the Civil Aeronautics Board, in past cases:

(a) Approximately 10 houses and a school,

(b) the campus of a university,

(c) a crowded beach area along a highway, and

(d) a boy's camp where numerous people were on the docks and the shore.

(2) The presence of people is important to the determination of whether an area is "congested".

(3) The term is administered to prohibit over flights that cut the corners of large, heavily congested, residential areas.

(4) No definition has been constructed, which determines the allowable number of people, the amount of ground traffic, the proximity of buildings to each other, the number of buildings or residences, or other conditions that exist in a particular area, to both protect persons or property on the ground and allow agricultural aircraft operations to take place.

8. LD₅₀ INDEX OF AGRICULTURAL CHEMICALS. Chemicals may be toxic if encountered in excess of normal amounts. Agricultural chemicals in common use may be toxic to humans as well as to the insects, animals, and plants being controlled.

A. Organic Phosphates. One group of chemical compounds in agricultural use is organic phosphates (sometimes called organophosphates), derived from phosphoric acid. Some examples are parathion, phosdrin, and malathion. These are generally the most toxic of all pesticides and, therefore, pose the greatest hazard to those handling or dispensing them.

B. Cumulative Toxic Effects of Organic Phosphates. Nearly all pesticides can have a cumulative effect; that is, symptoms of poisoning occur grad-

usually over a period of time and can be confused with symptoms of other illnesses.

C. LD₅₀ Index. LD₅₀ index shows the comparative toxicity of the various chemicals and is available for the information and use of inspectors engaged in the certification and surveillance of agricultural aircraft operations. LD₅₀ is the symbol used to denote the number of milligrams of chemical per kilogram of body weight of laboratory animals (usually rats), a single dose of which killed half the animals tested. The higher the LD₅₀ value, the lower the toxicity and the safer the chemical. For example, a chemical with an LD₅₀ index of 15,000 is far less toxic than one with an index of 15.

9. HAZARDOUS MATERIAL TRAINING.

Common sense in the presence of agricultural chemicals is very important; therefore, inspectors should receive the following training before exposure to agricultural operators.

A. General Aviation Operations Indoctrination. This course deals, in part, with job functions which include agricultural certification areas and precautions concerning chemical toxicity.

B. Agricultural Aircraft Operator Certification and Inspection. This course provides 6 hours of instruction dedicated to the recognition of toxic chemicals, their labeling, and necessary precautions when performing job functions associated with agricultural operations. Included is detailed instruction on the hazards of chemicals used in agricultural operations.

C. Other Sources. Other FAA courses include information on hazardous material recognition and precautions. The latest version of FAA Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, contains considerable information of general use to FAA inspectors regarding hazardous materials. Also, most county agricultural commissions or similar state and local organizations offer "mini" courses on hazardous chemicals and precautions to be taken.

10. POSSIBLE HEALTH HAZARDS DURING AGRICULTURAL AIRCRAFT ACCIDENT INVESTIGATION. Inspectors are normally required to place aircraft accident investigation duties above all other job functions. Because of this priority, it is not uncommon for an inspector to depart for the scene of an accident immediately after notification. In most instances, this is normal and proper. However,

when agricultural aircraft are involved, such action could prove to be dangerous.

A. Pre-Investigation Information. The inspector who departs for the scene of an agricultural aircraft accident without first finding out the nature of the pesticide, its hazards, and necessary precautions could be exposed to a serious health hazard. In this type of aircraft accident, a large amount of chemical may be concentrated in a small area, increasing the hazard to investigating inspectors.

B. Inspector Precautions. The following precautions are recommended regarding accident investigations which may involve agricultural materials.

(1) Determine from the operator, the persons for whom the operation was being conducted, the type, name, and EPA registration number of the material involved.

(2) With the above information call the nearest EPA office, poison control center, local agricultural commission officials, and/or the Pesticide Hotline to ask for guidance as to what precautions should be taken if an agricultural chemical is present. If advised to wear special gear such as protective clothing, goggles, gloves, breathing equipment, etc., ask the length of time it will take for the harmful characteristics of the pesticide to dissipate.

(3) Follow all instructions to the letter even if it means that on-the-scene investigation has to be postponed for several days.

(4) If special protective gear is needed or other precautions need to be taken, ensure that local law enforcement agencies are advised. Suggest that the scene of the accident be secured for the length of time special gear or precautions is needed.

C. Coordination with Law Enforcement Agencies. It is especially important that the inspector relay all the information received from EPA or a poison control center to the appropriate law enforcement agency. In most cases, law enforcement officers have already been at the accident scene and may need medical treatment.

11. PROFESSIONAL AERIAL APPLICATION SUPPORT SYSTEM (PAASS). PAASS is a program conducted by the National Agricultural Aviation Research & Education Foundation (NAAREF) designed to increase aviation safety and mitigate drift incidents within the agricultural aviation industry

through education and training. In addition to providing other education and training mediums, PAASS offers training programs held in conjunction with many of the state agricultural aviation association conventions throughout the country.

A. PAASS Information. For more information on the PAASS program contact NAAREF at 1005 E Street, S.E., Washington, D.C. 20003, (202) 546-5722.

B. Some regions are still holding programs and seminars for recurrent training, evaluating, and fine tuning procedures and techniques for controlling and mitigating spray drift. The program, known as Self-Regulated Application and Flight Efficiency (SAFE), may be conducted by state organizations as well as the NAAA.

C. FAA Attendance. While no formal attendance at PAAAS functions is required by Flight Standards District Office (FSDO) inspectors, field personnel may find it helpful to visit such events when they are announced and held within the area of geographical responsibility of the FSDO. When flight operations are conducted at events organized by PAAAS, waivers are not normally needed. In the past, during events such as SAFE programs attended by FAA representatives, no problems were observed with respect to maneuvering or non-participating aircraft. Operations at the clinics have been conducted in a highly organized and safe manner.

D. National Agricultural Aircraft Association (NAAA) Handbook. NAAA publishes a handbook which outlines, in detail, the concept of Operation SAFE and how to organize and conduct a clinic. Copies of this handbook are available from NAAA, 1005 E Street, S.E., Washington, DC 20003, (202) 546-5722.

E. FAA Recommendations. Based on the experience gained in the initial sessions of Operation SAFE and PAAAS, the following recommendations are provided:

(1) No waiver is necessary for flight operations or maneuvers involved.

(2) A Notice to Airman (NOTAM) may be necessary if the operations are conducted at a public-use airport. The wording should alert the transient pilot

that "simulated agricultural dispensing operations are being conducted alongside runway [number]."

F. FAA Comments. FAA comments and recommendations regarding the conduct of Operation SAFE sessions, the contents of the NAAA handbook, or the PAAAS program should be directed to FAA, Flight Standards Service, AFS-820, 800 Independence Ave., S.W., Washington, DC, 20591.

12. RENEWAL, AMENDMENT, CANCELLATION. An agricultural aircraft operator's certificate is effective until it is surrendered, suspended, or revoked. A currently effective certificate which has been lost or destroyed shall be replaced, upon written request from the operator, by the certificate-holding district office (CHDO). The replacement certificate will duplicate the lost or destroyed certificate. The replacement will have the word **duplicate** placed on it and the date of its preparation indicated. The certificate will be signed by the district office manager (figure 115-1).

A. Renewals. Not applicable to part 137 certificates.

B. Amendments. An agricultural aircraft operator may apply to amend the operating certificate.

(1) If an operator desires to have the prohibition against dispensing economic poisons added to or removed from the operating certificate, the operator should apply on FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application, in the same manner as for an original certificate (figure 115-2). The same procedure should be followed in applying for other changes on the Agricultural Aircraft Operator Certificate. If the application for amendment is denied, the applicant shall be advised in writing of the reason for denial (figure 115-3).

(2) The FAA may also amend an agricultural aircraft operator's certificate as a result of actions taken under Title 49 of the United States Code (49 U.S.) and 14 CFR part 13.

C. Cancellation. The FAA may suspend or revoke an agricultural operator's certificate.

(1) In the case of a voluntary surrender (e.g., when the operator decides to cease agricultural operations or to have the certificate held by the FAA pending enforcement proceedings), the operator must, as soon as possible, return the certificate by mail

(registered preferred) or in person to the district office having jurisdiction over the certificate.

(2) In the case of suspension or revocation of the certificate (e.g., as a result of an FAA enforcement action), the operator must, as soon as possible, return the certificate in a manner agreed to by the regional counsel.

(3) If the operator fails to meet the certification requirements of 14 CFR § 137.19(e) (e.g., does not have at least one aircraft equipped for agricultural operations), the FAA may revoke or suspend the certificate until the aircraft meets certification requirements. Discretion may be allowed if the aircraft is temporarily out of service while undergoing maintenance, etc.

**FIGURE 115-1
SAMPLE DUPLICATE CERTIFICATE**



US Department
of Transportation
Federal Aviation
Administration

Operating Certificate

This certifies that

[Enter company name]
[Enter address of principal base of operations]

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

[Enter, Commercial or Private Agricultural Aircraft Operations]

in accordance with said Act and the rules, regulations, and standards;

[Enter, Dispensing of Economic Poisons Allowed or Dispensing of Economic Poisons Prohibited as appropriate]

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect

[Enter the word, indefinitely]

By Direction of the Administrator

Certificate number: [Enter certification number
obtained from AFS-620]

[District office manager signs]
(Signature)

Effective Date: [Enter date certification
was completed]

[District office manager's title]
(Title)

Issued at: [ESDO, city & state]

**FIGURE 115-2
SAMPLE AMENDED CERTIFICATE**



US Department
of Transportation
**Federal Aviation
Administration**

Operating Certificate

This certifies that

[Enter company name]
[Enter address of principal base of operations]

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

[Enter, Commercial or Private Agricultural Aircraft Operations]

In accordance with said Act and the rules, regulations, and standards;

[Enter, Dispensing of Economic Poisons Allowed or Dispensing of Economic Poisons Prohibited as appropriate]

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect

[Enter the word, indefinitely]

By Direction of the Administrator

Certificate number: [Enter number from original certificate]
[Enter original certificate date; beneath the line, enter, Amended on: and enter the date of the amendment]
Effective Date: _____
Issued at: [ESDO, city & state]

(Signature)

(District office manager's title)
(Title)

FIGURE 115-3
LETTER ADVISING APPLICANT OF REASONS FOR DENYING AMENDMENTS

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

We are returning your application for amendment of your commercial agricultural operator's certificate. Your request to add the dispensing of economic poisons is denied because your personnel, [*personnel names*], failed to meet the knowledge requirements of 14 CFR § 137.19 regarding economic poisons.

We will be happy to accept a new application and reexamine [*personnel names*] after these deficiencies have been corrected

Sincerely,

[*District Office Manager's signature*]

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CHAPTER 116. CONDUCT CERTIFICATION OF A PART 137 OPERATOR

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1202

2. OBJECTIVE. The objective of this task is to determine that an applicant for a Title 14 of the Code of Federal Regulations (14 CFR) part 137 certificate meets the rules governing the operation of agricultural aircraft by private or commercial operators. Successful completion of this task results in either issuance of a Private or Commercial Agricultural Aircraft Operator Certificate or denial of a certificate.

3. GENERAL. Before beginning any process, inspectors should review volume 1, chapter 3, The General Process for Approval or Acceptance, and chapter 4, Certificating Organizations.

4. PREAPPLICATION PHASE.

A. Basic Eligibility Requirements. During initial contact with an applicant proposing a part 137 operation, the inspector must determine if the proposed operation is applicable to part 137. In making this determination the inspector considers the following basic eligibility requirements.

(1) The applicant should apply for either a private operator certificate or a commercial operator certificate (as per 14 CFR part 137 § 137.19).

(a) The private agricultural aircraft operator may not conduct operations over property unless he or she is the owner or lessee of the property or has ownership or other legal interest in the crops located on the property. (See chapter 115, Introduction to Part 137 Related Tasks, paragraph 13D Proof of Property Interest.) In addition, the private operator may not conduct operations for compensation or hire over a congested area.

(b) A commercial agricultural aircraft operator is not limited by 14 CFR § 137.35, provided all other requirements of part 137 are met.

(2) The private operator applicant must hold either a private, commercial, or airline transport pilot certificate with appropriate ratings.

(3) The commercial operator applicant must have available the services of a pilot with a current commercial or airline transport pilot certificate with appropriate ratings. (The applicant may be the available pilot.)

(4) The applicant must show proof of the availability of at least one aircraft that is properly certificated, airworthy, and equipped for agricultural operations.

(5) The applicant for a commercial operator certificate must have the appropriate knowledge and skills or have the services of a chief supervisor of agricultural operations who has the appropriate knowledge and skills.

B. Exceptions to part 137. The following are exceptions to part 137 applicability:

(1) A public aircraft conducting agricultural aircraft operations need not comply with the certification rules of part 137, but must comply with the operating rules of part 137. A public aircraft is one used exclusively in the service of any government or any political subdivision thereof and not engaged in carrying persons or property for commercial purposes.

(2) The holder of a 14 CFR part 133, Rotorcraft External-Load Operations, may conduct an agricultural aircraft operation involving only the dispensing of water with spreader additive on forest fires by rotorcraft external-load means without meeting the part 137 certification requirements.

C. Restricted and Experimental Category Aircraft. Restricted category aircraft may be used in agricultural operations, as per 14 CFR part 91 § 91.313(c). Under certain conditions aircraft with experimental (amateur-built) certification may also be used in private agricultural operations, as per 14 CFR § 91.319. No compensation may be given for the use of an experimental aircraft.

D. The Certification Team. For a part 137 certification, the office manager or unit supervisors selects at least one operations, one maintenance inspector, and an avionics inspector, as required for a team. One person is designated as the Certification Project

Manager (CPM). All correspondence, both to and from the applicant, shall be coordinated with the CPM.

E. Establishment of a District Office File on the Applicant. This file forms the basis for the eventual operator file if certification is successful. It also provides information for justifying the denial of a certificate.

F. Job Aids. The job aid which can be useful to the certification team and the applicant is the Certification Job Aid (figure 116-1). The certification team may also wish to provide the applicant with a blank sample Schedule of Events (figure 116-2) for the applicant's use. The applicant may, however, submit a certification schedule in any form as long as it is acceptable to the certification team.

G. The Preapplication Meeting If the certification team has determined that a preapplication meeting is necessary. That meeting should include, but not be limited to the following:

- (1) An overall review of the letter of intent (figure 116-3),
- (2) A review of the applicable 14 CFR and advisory circulars (AC's), and
- (3) A review and discussion of the upcoming certification process.

5. FORMAL APPLICATION PHASE. If the certification team decides to have a formal application meeting, all members of the team should be present, barring unanticipated circumstances. If one member cannot be present, another qualified inspector of the same specialty should attend. Most likely the team will have called the meeting due to discrepancies with the application, because the team perceived the applicant was unsure of what was expected or the proposed operation is complex.

6. THE DOCUMENT COMPLIANCE PHASE. The application and evidence of an appropriately equipped aircraft can be reviewed during the document compliance phase, unless they were satisfactorily reviewed in the formal application meeting. Then, this phase can be eliminated.

7. THE DEMONSTRATION AND INSPECTION PHASE. In this phase the applicant demonstrates the ability to comply with 14 CFR and safe operating practices.

A. Private Operators. Private agricultural aircraft operators are not required to maintain any records

pertinent to their operation. However, this does not preclude the use of a written record to present evidence of informing personnel of their duties and responsibilities.

B. Commercial Operators. Each holder of a commercial agricultural aircraft operator's certificate must maintain, and keep current at the primary base of operations, certain specific records. Commercial operators may also wish to keep a written record to indicate that personnel have been informed of their duties and responsibilities (14 CFR § 137.71).

C. Time Limitation. The required records must be kept at least 12 months. The operator must make the records available for inspection by the Federal Aviation Administration (FAA) upon request.

8. THE CERTIFICATION PHASE.

A. Issuance of Certificate. The air operator certificate number is obtained from AFS-620 as described in volume 2, chapter 203, Obtain a Certificate Number. When the certification team has concluded that the applicant meets the qualifications for either a private or commercial agricultural aircraft operator's certificate, the administrative staff will prepare FAA Form 8430-21, Operating Certificate. The effective date of the certificate is the month, day, and year the final inspection was successfully completed.

B. Signature and Certificate Facsimile. The original certificate, signed by the district office manager, is given to the operator. A copy of the certificate is placed in the district office file on the operator. A facsimile of the certificate must be carried on board each aircraft.

C. Private or Commercial Operator. The certificate and its copies must show that the certificate is for either a private operator or a commercial operator.

9. DISPOSITION OF FILE.

A. Certification Successful. If the application and other documents are approved and the demonstrations are acceptable, the applicant receives an agricultural operator's certificate. The district office file must contain copies of the application and a copy of the operator's certificate in addition to the other applicable material indicated in section 2 of this chapter.

B. Certification Unsuccessful. If the certification attempt is denied, the application is returned to the applicant as a notice of disapproval. The district office file must contain a copy of the notice of disapproval, with appropriate remarks pertaining to the denial.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task requires coordination with the airworthiness unit.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 43, 61, and 137
- AC 137-1, Agricultural Aircraft Operations
- Medical Problems in Aerial Application, published by the Civil Aeromedical Institute, April 1977
- PTRS Procedures Manual (PPM)

B. Forms.

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet
- FAA Form 8430-21, Operating Certificate (figures 116-8 and 116-9)
- FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application

C. Job Aids.

- 14 CFR part 137 Certification Job Aid (figure 116-1)
- Sample Schedule of Events (figure 116-2)
- Sample letters and figures

3. PREAPPLICATION PHASE PROCEDURES.

A. Initial Inquiry. Upon initial inquiry from an applicant, ask for the location of the principal base of operation. If the principal base of operation is the jurisdiction of another FAA district office, provide the applicant with the location and telephone number of that office. However, continue to give the applicant information to begin certification.

B. Applicant Resources. Make sure the applicant is aware of the certification and operating requirements of 14 CFR parts 43, 61, 91, and 137. The applicant should have current copies of parts 91 and 137 and

AC 137-1. If there is any question, explain the following:

- (1) General applicability and definition of terms,
- (2) Certification requirements,
- (3) Operating rules, and
- (4) Required records and reports of part 137.

C. Other Regulations. Advise the applicant that he or she is responsible for complying with other Federal, state, and or county aerial application regulations.

D. Letter of Intent. Determine if a letter of intent is required based on the size and scope of the operation. (See paragraph F below for content.) If no letter of intent is required, give the applicant copies of the application.

E. PTRS. Open PTRS file.

F. District Office Review of Letter of Intent. Within 30 working days of the FAA's receipt of a letter of intent, review it to determine if the information is complete, accurate, and acceptable.

(1) The letter of intent should contain the following items:

(a) Specific type of agricultural aircraft operator certificate for which he or she is applying (commercial or private);

(b) Company legal name and any doing business as (d/b/a's), principal operation base address, primary airport address, mailing address (if applicable), and telephone numbers;

(c) Type of aircraft to be operated;

(d) Estimated date when operations or services will begin;

(e) Names and addresses of any management personnel or chief supervisor;

(f) Three, three-letter designators, in order of applicant's preference; and

(g) In the case of a corporation, the Articles of Incorporation.

(2) Determine if the applicant meets the eligibility requirements for certification. (See detailed

eligibility requirements in 14 CFR § 137.19.) If the applicant does not satisfy these, discuss the specific areas that must be complied with before certification can begin.

G. Application. If the applicant appears to meet the basic eligibility requirements, give the applicant three copies of FAA Form 8710-3.

(1) Discuss how to complete these forms with the applicant.

(2) Advise the applicant to submit the forms in triplicate with original signatures on each.

(3) Explain the certification process to the applicant, including the requirements for:

(a) The Preapplication Phase,

(b) The Formal Application Phase,

(c) The Document Compliance Phase,

(d) The Demonstration and Inspection Phase, and

(e) The Certification Phase.

H. Preapplication Meeting. Determine if a preapplication meeting is necessary based on the following considerations about the applicant:

(1) Previous part 137 operating experience.

(2) Size and scope of operation.

(3) Area of operation.

(4) Applicant's ability to comply with requirements.

(5) If a preapplication meeting is not necessary, schedule a date and time for a formal application meeting.

(6) If a preapplication meeting is necessary schedule a date and time. At the meeting discuss the following:

(a) Area of operation (local or across district boundaries);

(i) Location of principal operation base, and

(ii) Location of probable satellite sites.

(b) Type of operation;

(i) Private or commercial operator,

(ii) Economic poisons or other dispensing material, and

(iii) Operating as individual, corporation, or partnership.

(c) Previous experience with part 137 operations;

(d) Category and class of aircraft (helicopter or airplane);

(e) Qualifications and experience of chief supervisor;

(f) Applicability of parts 91 and 137;

(g) AC 137-1; and

(h) Any previous or pending enforcement action.

I. District Office Records. If not already accomplished, complete FAA Form 1360-33. Indicate the actions taken to date and any future actions planned.

J. Establish a District Office Working File. Place any correspondence, additional documents, and FAA Form 1360-33 in this file.

K. Other District Office Actions. Follow office procedures to contact the Enforcement Information System (EIS) to determine applicant's enforcement history.

(1) If a certificate suspension or revocation order indicates that the applicant cannot be certificated while the order is in effect, inform the applicant in writing (figure 116-4) that, until the enforcement is fulfilled, he or she is ineligible for certification.

(2) Place the EIS output in the file.

L. Terminating the Preapplication Phase. This ends the preapplication phase. Begin the formal application phase with the receipt of the completed application form.

4. FORMAL APPLICATION PHASE PROCEDURES.

A. Application Review. Within 30 working days of receipt, review the application only to determine if it is of sufficient quality to continue with certification. Review it in depth in the document compliance phase. (An example of a properly completed application is shown in figure 116-5.)

B. Application Not Accurate or Complete. If the application is not complete or accurate, notify the applicant in writing (figure 116-6) of needed changes before certification can be continued.

C. Need for Formal Application Meeting. Determine if the optional formal application meeting is necessary.

(1) If a formal application meeting is not necessary, schedule the certification inspection of the principal base of operations. Review with the applicant the procedures required during the demonstration and inspection phase.

(2) If a formal application meeting is necessary, schedule a date and time.

D. Formal Application Meeting. Discuss the items which would have been covered in a preapplication meeting or any discrepancies in the application thus far.

E. Terminating the Formal Application Phase.

This completes the formal application phase. The next phase is the document compliance phase (normally conducted in the district office).

5. DOCUMENT COMPLIANCE PHASE PROCEDURES. After accepting the application, the team must assure each document is complete and correct through an in-depth review.

A. Document Review. The certification team evaluates at least the following:

(1) The Application.

(a) In Block 1, the applicant indicates whether he or she is seeking a private or commercial certificate, whether he or she will be dispensing an economic or other poison, and that the application is for original issuance.

(b) Block 2 is for the name, address (physical location, not a post office box number unless it reflects the physical location of the applicant's base of operations), and telephone number of the applicant. The applicant lists here all d/b/a's that will be used.

(c) Block 3 is for the address and phone number of the principal base of operations.

(d) In Block 4, the applicant specifies whether the application is for an individual, a corporation, or a partnership.

(e) In Block 5, applicants for a commercial operator's certificate must indicate the name of the chief supervisor, if it is other than the applicant.

(f) In Block 6, the applicant indicates the chief supervisor's grade of certificate; category, class, and type ratings; and certificate number.

(g) Blocks 7A and 7B should be left blank.

(h) In Block 8, the applicant indicates the number and the correct make and model of aircraft and whether they are equipped for liquid or solid dispensing.

(i) In Block 9, the applicant lists any other pilots he or she employs and their certificate numbers.

(j) Block 10 is for any pertinent remarks the applicant may have.

(k) In Block 11, the applicant or authorized officer signs and dates the application. Signatures on all copies must be original.

(l) The reverse side is the inspector's report, where the certification team indicates the acceptability of the inspections. Figure 116-7 shows a typical example.

(2) Chief Supervisor (commercial operators only) and pilot qualifications (14 CFR § 137.19).

(a) Pilot currency requirements (part 61), and

(b) Any existing letters of competency.

(3) Aircraft records (Airworthiness).

(a) Registration certificate,

(b) Airworthiness certificate,

(c) Aircraft Maintenance Documents, and

(d) Requirements of 14 CFR § 137.31.

B. Unsatisfactory Items. If there are any unsatisfactory items, advise the applicant that they must be corrected before certification can continue.

C. Terminating the Document Compliance Phase. When all documents are satisfactory, conclude the document compliance phase. The next phase is the demonstration and inspection phase.

6. DEMONSTRATION AND INSPECTION PHASE PROCEDURES.

A. Conduct Knowledge and Skill Test. Accept a letter of competency or a logbook endorsement by a ~~FAA inspector or a designated chief supervisor of~~ operations as meeting the requirement for a knowledge and skill test. If a pilot does not have a letter of competency or a logbook endorsement, administer a knowledge and skill test to the chief supervisor, who can then, in turn, administer tests to other agricultural pilots. If the chief supervisor has passed a state agricultural exam, it is not necessary to test on chemical knowledge. (See chapter 118, Administer a Knowledge and Skill Test to an Agricultural Pilot.)

(1) If any test is failed, notify the pilot immediately, following the procedures in chapter 118. Reschedule the appropriate portion of the test.

(2) If the pilot passes the test, issue a letter of competency or make a notation in the pilot's logbook. Use chapter 118, figure 118-3 or 118-4, as applicable. (If a logbook entry is used, make a memorandum for the office file.)

B. Inspect Record Keeping Requirements. Inspect the applicant's record system.

(1) Commercial operators (14 CFR § 137.71), and

(2) Private operators (none are required).

C. Inspect Aircraft. (Airworthiness)

D. Conduct a Base Inspection. See chapter 117, Conduct a Part 137 Base Inspection.

E. Terminating the Demonstration and Inspection Phase. When all demonstrations and inspections are complete, conclude the demonstration and inspection phase. The next phase is the certification phase.

7. CERTIFICATION PHASE PROCEDURES.

When all certification requirements have been met, complete inspection reports and checklists. Have the administrative staff prepare the operating certificate.

A. Prepare and Issue the Operating Certificate. Use FAA Form 8430-21 for an Operating Certificate (figure 116-8 or 116-9). Obtain a certificate number during certification and its resolution following the procedures in chapter 203, Obtain Certificate Numbers. The following information must be typed on

the appropriate form when preparing the certificate for issuance.

(1) Enter the certificate holder's full, legal name directly below the words, "This certifies that . . ." ~~Show other names (such as doing business as) on the~~ certificate. If necessary, list them on a separate, attached letter (figure 116-10).

(2) Enter the address of the certificate holder's principal base of operations directly below the certificate holder's name. (Do not use a post office box address unless it also reflects the physical location of the principal base of operations.)

(3) Do not modify the pre-printed certification statement of authority. Complete the statement by typing either, Private Agricultural Aircraft Operations or Commercial Agricultural Aircraft Operations in the space provided. Indicate whether dispensing of economic poisons is prohibited or allowed.

(4) Obtain the final certificate number from AFS-620 in accordance with 2, chapter 203, Obtain Certificate Numbers.

(5) Enter the date all requirements for certification were met.

(6) Type the four-character, alpha-numeric designator, city, and state of the Certificate-Holding District Office (CHDO) into the Issued at space of the form (e.g., EA18, Richmond, VA).

(7) Submit the certificate to the district office manager for signature.

(8) Enter the full title of the person signing the certificate in the space provided. Enter the acronym of the region and the Flight Standards District Office (FSDO) acronym and number in the region/office space (e.g., AWP FSDO 04).

B. Certificate Denial. If any certification requirement is not met, issue a letter of denial (figure 116-11). Specify reasons for denial.

C. Certification Report. Assemble a certification report containing the following:

- (1) A copy of the letter of intent, if applicable;
- (2) The certification job aid;
- (3) The application;
- (4) The schedule of events;

- (5) A copy of the Operating Certificate issued;
- (6) A summary of any difficulty encountered during certification and its resolution; and
- (7) A copy of any deviation or waiver issued.

D. Disposition of Certification File.

(1) The district office shall retain the original certification report in the operators district office file.

(2) If airplanes are to be housed outside of the CHDO's jurisdiction, the Principal Operations Inspector (POI) assigned to the operator shall notify the other district office and provide a copy of any portion or all certification files at their request.

E. Minimum Equipment List (MEL). Issue a letter of authorization (LOA) to operate with an MEL, if applicable. (See chapter 58, Approve a Minimum Equipment List.)

F. Vital Information Subsystem (VIS). Enter all appropriate information in the VIS Air Operator Basic File and Air Operator Aircraft Auxiliary File. (See chapter 205, Open/Update Vital Information Subsystem File.)

G. District Office File. The Team Leader shall ensure an official office file is established after certification is complete. The file shall contain at least the following:

- (1) Material from any working file used up to this point;
- (2) The certification report and attachments;
- (3) Enforcement Information Subsystem/Accident Incident Data Subsystem (EIS/AIDS) profile on

applicant and personnel, including a negative report, if applicable;

- (4) Approved MEL's, if applicable;
- (5) Surveillance reports; and

(6) General correspondence relevant to the operator or agency.

H. PTRS. Make PTRS entry for this task.

8. TASK OUTCOMES. Completion of the task results in either:

A. Issuance of a certificate authorizing operations under part 137.

B. A record on file consisting of one of the following:

(1) Written notification to the applicant denying the certificate.

(2) Indication of the return of all original documents to the applicant.

C. A letter to the applicant confirming termination of the certification process per the applicant's request. (figure 116-12)

9. FUTURE ACTIVITIES.

A. Develop Post-Certification Plan. When developing a post-certification plan, the inspector should plan to conduct additional surveillance or inspections during the first 90 days the organization is in business. Accomplishment of the surveillance may necessitate assistance from other district offices.

B. Conduct Surveillance. According to the established post-certification plan, conduct surveillance at appropriate intervals.

**FIGURE 116-1
PART 137 CERTIFICATION JOB AID**

14 CFR PART 137 CERTIFICATION JOB AID					
NAME OF OPERATOR:	CERTIFICATION TEAM Name _____ Specially _____ _____ _____				
ADDRESS:	_____ _____				
Page One	INSP. INITIAL	DATE	YES	NO	N/A
1. Initial contact handled by					
2. Letter of Intent					
3. Pre-application meeting					
4. Applicant provided resources/advised how to obtain					
5. Formal application meeting					
6. Application for private agricultural certificate submitted					
7. Application for commercial agricultural certificate submitted					
8. Aircraft is certificated and airworthy					
9. Aircraft is equipped for agricultural operations					
10. Aircraft inspected by airworthiness inspector					
a. Inspection of installation and function of load carrying or attaching devices					
b. Optional equipment installations inspected					
c. Airworthiness directives record current					
d. Installation and function of spray or diffusion equipment and jet-tisoning device					
e. In-house or contract maintenance observed					
11. Applicant has services of appropriate chief supervisor and pilots					
a. Knowledge test passed (14 CFR § 137.19(e)(1))					
b. Skill test passed (14 CFR § 137.19(e)(2))					
c. For congested area operations, each PIC meets the requirements of 14 CFR § 137.53(b)(1) through (2)					
12. Congested area operations proposed					
a. Basic congested area plan submitted for approval					
(1) Plan provides for approval by appropriate government officials					
(2) Plan provides for ATC coordination, if needed					
(3) Plan includes a complete description of the operations					
(4) Plan lists all involved aircraft by make, model, and N-number					
(5) Plan list all involved pilots by name, certificate, grade, and number					
(6) Plan includes appropriate maps, charts, and diagrams					
(7) Plan has a specific method for discontinuing the operation in the event of a hazard					

FIGURE 116-1
PART 137 CERTIFICATION JOB AID - Continued

14 CFR PART 137 CERTIFICATION JOB AID					
NAME OF OPERATOR:	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> CERTIFICATION TEAM Name _____ _____ _____ </div> <div style="width: 45%;"> Specially _____ _____ _____ </div> </div>				
ADDRESS:	_____ _____ _____				
Page Two	INSP. INITIAL	DATE	YES	NO	N/A
b. Plan clearly describes who is actually conducting the operation and what is being contracted					
13. Applicant understands agricultural aircraft operating limitations					
a. Limitations of 14 CFR § 91.313(b) and (c)					
b. Prohibitions on passenger carrying					
c. Weight and balance limits					
d. Limits on operating without position lights					
e. Limits on congested area dispensing					
f. Limits on non-standard traffic patterns					
g. Limits of 14 CFR § 91.119 during ferry to/from dispensing site					
14. Commercial operator recordkeeping					
a. Name of each person to which services were provided					
b. Date services were provided					
c. Name and quantity of material dispensed					
d. Name of each pilot used and date 14 CFR § 137.19(c) was met					
e. Knowledge of need to keep records for one year					
15. Certificate number obtained from AFS-720					
16. Private or Commercial Agricultural Aircraft Operator's Certificate prepared and issued					
17. Certification report and district office file prepared					
18. Surveillance plan established					
19. Other					
REMARKS:					

14 CFR PART 137 CERTIFICATION JOB AID		
Remarks:		
	Inspectors' signatures:	

**FIGURE 116-2
SCHEDULE OF EVENTS**

14 CFR PART 137 SCHEDULE OF EVENTS					
NAME OF OPERATOR:	NAMES OF MANAGEMENT PERSONNEL				
	Name	Title			
	_____	_____			
	_____	_____			
ADDRESS:	_____	_____			
	Applicant Date Ready	FAA Date Received	FAA Date Returned	FAA Date Applied/ Accepted	Inspector Initial
1. Letter of Intent					
2. Application (FAA Form 8710-3)					
3. Chief Supervisor Knowledge and Skill Test					
4. Other Pilots Knowledge and Skill Test					
5. Aircraft Lease/Proof of Availability					
6. Aircraft Conformity Inspection (Airworthiness)					
7. Aircraft Records (Airworthiness)					
8. Commercial Operator Recordkeeping System					
9. Proof of Bona Fide Property Interest (Private Operators)					
10. Other:					

**FIGURE 116-3
SAMPLE LETTER OF INTENT**

[Operator's Letterhead]

[Date]

[Geographically responsible FAA FSDO address]

Gentlemen:

This is to notify the Federal Aviation Administration of our intent to become a certificated Commercial *[or Private]* Agricultural Aircraft Operator under part 137 of Title 14 of the Code of Federal Regulations.

We plan to begin operations on *[date]*, and are ready for your certification inspection at this time. Operations will be confined to *[geographic location]* and will involve the operation of *[number and type of aircraft]*.

Enclosed is FAA Form 8710-3 in duplicate. Our requested three letter certificate designators are *[list preferred designators]*, in that order of preference.

Sincerely,

[Operator's name and title]

Attachments

FIGURE 116-4
LETTER INDICATING APPLICANT INELIGIBLE FOR CERTIFICATION BECAUSE OF
EXISTING ENFORCEMENT ACTION

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to inform you that you are ineligible for certification as an agricultural aircraft operator.

During the investigation of enforcement history, it was determined that [*insert type of enforcement action*].

If you have any questions concerning this matter or desire to reapply once the enforcement action has been fulfilled, please contact this office at [*telephone number*].

Sincerely,

[*District Office Manager's signature*]

FIGURE 116-5
FAA FORM 8710-3, AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE APPLICATION


 US Department of Transportation Federal Aviation Administration		AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE APPLICATION		INSTRUCTIONS Submit in duplicate to the local General Aviation District Office.	
1. APPLICATION FOR		TYPE PRIVATE COMMERCIAL		FOR DISPENSING (Check one) ECONOMIC POISONS OTHER THAN ECONOMIC POISONS	
2. NAME AND ADDRESS OF APPLICANT [Applicant's name, business name, and mailing address]		3. PRINCIPAL OPERATIONS BASE (Airport, City, State) [Applicant's physical address]		ORIGINAL AMENDMENT REISSUANCE	
TELEPHONE NUMBER		TELEPHONE NUMBER		5. NAME OF CHIEF SUPERVISOR OF OPERATIONS IF OTHER THAN SHOWN IN ITEM 2 (COMMERCIAL OPERATIONS ONLY) (First) (Middle Initial) (Last)	
2. OPERATING AS INDIVIDUAL CORPORATION PARTNERSHIP		OTHER (Specify)		6. AIRMAN CERTIFICATE HELD GRADE PRIVATE COMMERCIAL AIRLINE TRANSPORT ASE AMEL ASES AMES HELICOPTER GYROPLANE	
7A. DO YOU HOLD A CURRENTLY EFFECTIVE CERTIFICATE OF WAIVER FOR CONDUCTING AGRICULTURAL AIRCRAFT OPERATIONS?		CERTIFICATE NUMBER		RATINGS TYPE RATING(S) (Specify)	
7B. WAIVER HELD		DATE ISSUED EXPIRATION DATE		YES (Complete 7B) NO	
7B. WAIVER HELD		DATE ISSUED EXPIRATION DATE		YES (Complete 7B) NO	
8. AGRICULTURAL AIRCRAFT TO BE OPERATED					
MAKE		MODEL		EQUIPPED FOR LIQUID SOLID	
TOTAL NUMBER EACH AIRCRAFT OPERATED		REGISTRATION MARK (List one)			
9. LIST THE NAME(S) AND AIRMAN CERTIFICATE NUMBER OF AGRICULTURAL PILOT(S) WORKING FOR YOU AT THE PRESENT TIME (Use separate sheet and attach if additional space is needed.)					
NAME		CERT. NO.		NAME	
10. REMARKS					
11. CERTIFICATION: I CERTIFY THAT STATEMENTS MADE ON THIS FORM ARE TRUE AND CORRECT.					
DATE		TITLE		SIGNATURE	
[date]		[Applicant's title]		[Applicant's printed name and signature]	

FIGURE 116-6
LETTER INDICATING APPLICATION IS NOT CORRECT

[*FAA Letterhead*]

[*Date*]

[*Applicant's name and address*]

Dear [*Applicant's name*]:

The enclosed FAA Form 8710-3, Application for Agricultural Aircraft Operator Certificate is being returned because [*cite the specific item number on the application form and discrepancy*].

I am also enclosing additional forms for your use in resubmitting your application. The new application should be submitted no later than [*date - 30 days*] so that the certification process will not be terminated.

Sincerely,

[*Name and signature of operations inspector*]

FIGURE 116-7
FAA FORM 8710-3, REVERSE SIDE, INSPECTOR'S REPORT

INSPECTION REPORT - For FAA Use Only (To be completed by the General Aviation for Flight Standards District Office)			
COMPLIANCE WITH APPLICABLE REGULATIONS			
1. PILOTS	NOT REQUIRED	SATISFACTORY	UNSATISFACTORY
A. CERTIFICATES ✓		X	
B. RATING(S)		X	
C. KNOWLEDGE TEST	X		
D. SKILL TEST	X		
2. AIRCRAFT			
A. CERTIFICATED		X	
B. AIRWORTHY		X	
C. EQUIPPED FOR AGRICULTURAL OPERATIONS		X	
10. REMARKS (Include an explanation of denial if application is disapproved). This applicant has been employed as a chief supervisor by other operators for the past six (6) years and is establishing his own business. According to our records, neither he nor his pilots have been involved in an accident during dusting or spraying operations.			
4. DISTRICT OFFICE ACTION			
X	CERTIFICATE ISSUED	INSPECTORS SIGNATURES	
	APPLICATION DISAPPROVED	[Signed] William F. Worth, Operations Inspector	
DATE INSPECTION COMPLETED 1/21/90		[Signed] Steve C. Boyington, Maintenance Inspector	

AFS Electronic Forms System - JetForm FormFlow - 12/1998

FIGURE 116-8
SAMPLE PRIVATE AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE



US Department
of Transportation
Federal Aviation
Administration

Operating Certificate

This certifies that

[Enter company name]
 [Enter address of principal base of operations]

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

[Enter, Private Agricultural Aircraft Operations]

in accordance with said Act and the rules, regulations, and standards;

[Enter, Dispensing of Economic Poisons Allowed or Dispensing of Economic Poisons Prohibited as appropriate]

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect

[Enter the word, indefinitely]

By Direction of the Administrator

Certificate number [Enter certification number
obtained from AFS-620]

 [District office manager signs]
(Signature)

Effective Date: [Enter date certification
was completed]

 [District office manager's title]
(Title)

Issued at: [ESDO, city & state]

FIGURE 116-9
SAMPLE COMMERCIAL AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE



US Department
of Transportation
Federal Aviation
Administration

Operating Certificate

This certifies that

[Enter company name]
[Enter address of principal base of operations]

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

[Enter, Commercial Agricultural Aircraft Operations]

in accordance with said Act and the rules, regulations, and standards;

[Enter, Dispensing of Economic Poisons Allowed or Dispensing of Economic Poisons Prohibited as appropriate]

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect

[Enter the word, indefinitely]

By Direction of the Administrator

Certificate number: [Enter certification number
obtained from AFS-620]

[District office manager signs]
(Signature)

Effective Date: [Enter date certification
was completed]

[District office manager's title]
(Title)

Issued at: [ESDO, city & state]

FIGURE 116-10
LETTER SHOWING D/B/AS

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*Operator's name*]:

This letter, accompanied by Operating Certificate No. [*insert number*] issued to [*legal name of operator*] on [*date of issuance*], authorizes the following additional business names to be used while exercising the privileges and limitations of the certificate

[*List all d/b/a's authorized*]

Sincerely,

[*District Office Manager's signature*]

**FIGURE 116-11
LETTER DENYING CERTIFICATE**

[*FAA Letterhead*]

[*Date*]

[*Applicant's Address*]

Dear [*Applicant's name*]:

This letter is to inform you that your application for an Agricultural Aircraft Operating Certificate is denied. During the process of application, the following items were not in compliance with the requirements of Title 14 of the Code of Federal Regulations parts 61 and 137:

[*To the inspector: List only those items that were found not in compliance and cite the specific section. For example:*

1. Pilot did not possess valid medical certificate (14 CFR § 61.3(c)).

2. The aircraft presented for initial inspection did not have a properly installed shoulder harness (14 CFR § 137.31 (b)).]

Attempts by personnel from this office to determine if these discrepancies have been corrected have not been successful.

Sincerely,

[*District Office Manager's signature*]

FIGURE 116-12

LETTER CONFIRMING TERMINATION OF PROCESS AT APPLICANT'S REQUEST

[*FAA Letterhead*]

[*Date*]

[*Applicant's name and address*]

Dear [*Applicant's name*]:

This letter confirms your request to terminate the certification process for the issuance of an Agricultural Operating Certificate.

All materials submitted for review are being returned with this letter. Any attempts to re-apply after the date of this letter will require reinitiating the entire certification process.

Sincerely,

[*District Office Manager's signature*]

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CHAPTER 117. CONDUCT A PART 137 BASE INSPECTION

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1616

2. OBJECTIVE. The objective of this task is to determine that the principal base of operations for an applicant for a Title 14 of the Code of Federal Regulations (14 CFR) part 137 operating certificate, or for an existing operator, meets the regulatory requirements of the certificate. Successful completion of this task results in an indication of satisfactory or unsatisfactory in the operator's district office file.

3. GENERAL

A. Title 14 CFR Requirements. Title 14 CFR does not specify what type of physical facilities an agricultural operator must have. This is usually governed by state and local regulations and to some extent by regulations of the Environmental Protection Agency (EPA).

B. Inspection Coverage. If the inspector is familiar with state and local or EPA regulations, he or she should bring any discrepancies with non-aviation regulations to the attention of the operator. However, Federal Aviation Administration (FAA) inspectors have no enforcement capability for state, local, or EPA areas.

C. Aviation Safety. The inspector's duty is to determine that the operator's practices and procedures at the base of operations conform to the 14 CFR insofar as it applies.

4. SPECIFIC AREAS OF CONCERN.

A. Preparation. Before going to an agricultural operator to conduct surveillance, it is important that the inspector review the district office file on the operator. This will give the inspector insight into the type of operation being conducted (i.e., private, commercial congested area operation). In the case of a newly certificated operator, weak areas noted in the certification report should be studied then closely examined during the inspection.

B. Examination of Operator Records.

(1) A discussion with the operator and review of the records should indicate to the inspector if any names other than the ones appearing on the certificate are being used.

(2) The records shall be located where the operator has designated the principal base of operations. Unusual circumstances may dictate that the records may temporarily be at a different location, and the inspector must use some judgement in evaluating such a situation.

(3) Private agricultural operators are not required to maintain records in accordance with (IAW) 14 CFR part 137 § 137.71. When reviewing commercial operator records, the inspector may find that the records are copies of bills or invoices sent to the operator's customers. Since there is no set procedure on what form commercial operator records must be, any method used by the operator is satisfactory as long as it maintains the minimum requirements of 14 CFR § 137.71(a)(1), (2), and (3), which includes

(a) Name and address of person to whom services were rendered,

(b) Date of service, and

(c) Name and quantity of material dispensed.

(4) Pilot records are usually kept separate from the operating records, and they must meet the requirements of 14 CFR § 137.71(a)(4).

(5) An operator, including a private operator, must present evidence that each person used in the agricultural operations has been informed of their duties and responsibilities.

C. Private Operators. Since a private operator is not required to keep records, the inspector must discuss the private operator's operations in sufficient detail for the inspector to ensure that operations for compensation or hire are not being conducted. The inspector must verify that only the property or the crop, in which the operator has an interest or owner-

ship, is all that is being serviced. Leases or other written agreements can be accepted as proof of bona fide property interest. This has been a weak area in the past, but, in the attempt to ensure compliance, the inspector must take care not to make the discussion seem accusatory. If, on the other hand, the inspector has received complaints about the private operator, the appropriate investigatory procedures must be followed. (Refer to chapter 181, Conduct a Complaint Investigation, or chapter 182, Conduct a Violation Investigation, as appropriate.) The use of partial ownership should not be used as a way to circumvent the regulation.

D. Aircraft Inspection. A detailed examination of the aircraft is usually conducted by an airworthiness inspector. However, when circumstances prevent airworthiness from being represented during the inspection, the operations inspector should assure that all available aircraft and their aircraft maintenance documents are examined for at least a current annual inspection, for installation of seat belts and shoulder harnesses, and for a facsimile of the certificate on board.

(1) Original airworthiness and registration certificates need not be kept in the aircraft, but they must be available at the base of operations from which dispensing operations are conducted. The base of operations is defined as the permanent base of the operator unless dispensing operations are being conducted from a temporary base where the operator has temporarily stationed maintenance facilities and personnel.

(2) With respect to certain aircraft modifications, including fuel jettisoning, airworthiness inspectors must be consulted.

E. Air Traffic Control (ATC) Coordination. The inspector must ensure that the operator has made prior arrangements with airport management and ATC before operating in and around airports.

F. Night Operations. Night operations may be conducted under certain conditions. The following is guidance which is useful for the aviation safety inspector in assessing the basic safety considerations of such operations.

(1) Agricultural aircraft operating between sunset and sunrise must adhere to the provisions of 14 CFR part 91 §§ 91.205(c)(2) and (3) and 91.209. However, 14 CFR § 137.47 permits an agricultural aircraft to operate without position lights if prominent unlighted objects are visible for at least one mile.

(a) Agricultural aircraft without position lights may conduct takeoffs and landings at airports with a functioning control tower only as authorized by ATC.

(b) Takeoffs and landings at uncontrolled airports can be conducted only with the permission of the airport management and when other aircraft operations, requiring position lights, are not in progress.

(2) The operator should be encouraged to establish safety practices and procedures for the operator's particular operation, including night operations. The following guidelines are some, but certainly not all, suggestions for these practices and procedures.

(a) The field where night operations are to be conducted should be checked from the ground in daylight with the ground personnel, if they are used, or with the supervisor of the operation. A plan for working the field should be developed. The pilot may find it advantageous to diagram the field and indicate the approximate locations of any obstructions which could affect the safety of the operation.

(b) Immediately before a night operation, the pilot should obtain any information available concerning the possibility of a temperature inversion in the area of operation. Inversions cause suspension in the air of dust particles and liquid droplets, which can result in an uncontrollable drift problem. Operations should not be conducted in areas of temperature inversions.

(c) When chemical dust is dispensed, the resulting cloud could spread in such a way that the horizon, flaggers, or other ground references become obscured. If this condition occurs, the operation must be halted until ground references are once again visible.

(d) The operator should establish flight experience qualifications for pilots conducting night operations. For example, an operator may require pilots to acquire 15 to 25 hours in operations in proximity to the area of proposed night operations. Another, more specific qualification would be to require a pilot to work an area during daylight before working the same area at night.

(e) Operators should also consider establishing minimum field sizes, based on the number, location, and kind of obstructions, for night dispensing operations. For example,

(i) A relatively small field (1,500 feet by 1,500 feet) may be safe if bounded on only two sides by obstructions.

(ii) A larger field (1,500 feet by 2,500 feet) could be safe with obstructions on three sides.

(iii) Operations at fields with obstructions on all four sides should be considered only if the field is 2,500 feet by 2,500 feet or larger.

(iv) These dimensions are only suggestions and are not standards established by the FAA. The operator should establish standards appropriate to the geographical area where operations are conducted.

5. GUIDELINES FOR BASE INSPECTIONS.

A. Coordination. When an airworthiness inspector cannot attend the base inspection, the operations inspector should tailor the inspection to examine the aspects of an inspection that the airworthiness inspector would normally do. For example,

(1) The inspector should be prepared to examine the equipment, such as the aircraft and dispensing equipment.

(2) The inspector should also observe preflight checks performed by the pilots, such as verifying the integrity of the dispersal equipment, loading of the appropriate amounts (weight) of chemicals, etc.

(3) The inspector should coordinate with an airworthiness inspector to ensure follow-up inspections of any items outside of the operations inspector's expertise.

B. Levels of Deficiency and Appropriate Corrective Action. Following are some examples of various deficiencies that might occur in an inspection and the appropriate action to take for the situation. The actions described are based on two assumptions.

(1) First, if a discrepancy is found, the base inspection is completed anyway. After inspection, all the deficiencies and recommended corrective actions would be summarized in a note to the file and/or in remarks to the PTRS Data Sheet.

(2) Second, an unsatisfactory report often calls for an enforcement investigation. Unsatisfactory reports are usually based on obvious violations found during the inspection. There are intermediate stages between satisfactory and unsatisfactory results, any of which may result in a satisfactory inspection with corrective action.

(a) A spot correction involves a discrepancy which was noted and corrected during the inspection and which was not a violation. Because it was corrected on the spot, it may require no further action. An example of a spot correction might be: The inspector does not find a facsimile of the agricultural aircraft operator's certificate on board the aircraft. The corrective action would consist of the inspector notifying the operator of this discrepancy. During the remainder of the inspection, the operator makes a copy of the certificate and places it in the aircraft. No other corrective action would be necessary if the inspector found that no agricultural operations were conducted without the facsimile on board. However, the inspector shall mark the PTRS sheet with an "I" to indicate information. The inspector shall note the discrepancy and the spot correction on the transmittal form and/or the job aid.

(b) A follow-up action would involve deficiencies or lack of pilot knowledge or skill that do not involve a violation but which require action other than a spot correction. For example, during the inspection the inspector noted that a required placard was not in place on the aircraft and a replacement for the placard was not readily available. However, there was no evidence that the aircraft had been operated without the placard. The corrective action would consist of the inspector verbally advising the operator that the placard must be in place before the aircraft is operated again. At the office the inspector would confirm this in writing to the operator and schedule a follow-up inspection to determine if the placard was replaced. The inspector shall mark the PTRS transmittal form with an "F" to indicate a follow-up action.

(c) A blatant violation could be cause for a finding of unsatisfactory for the base inspection. For example, during the inspection the inspector finds that a new chief supervisor has been designated and has acted in that capacity but has not completed the knowledge and skill test. The inspector shall mark the PTRS transmittal sheet with an "E" to indicate the inspection resulted in an enforcement investigation. (See chapter 182 and the latest version of FAA Order 2150.3, Compliance and Enforcement.)

C. Discrepancies Between District Office Files and Operator Files. When a discrepancy is found between office records kept on the operator and records maintained by the operator, the inspector shall determine which set of records is current, approved, and correct. The outdated records must be brought up to date. For

example, the operator's records indicate a change in the address of the base of operations, of which the FAA was not aware. District office records must be altered to reflect the correct address. The inspector must determine whether an enforcement action is necessary.

6. INITIAL CERTIFICATION VS. LATER SURVEILLANCE. When this task is performed as the base inspection for an original certification (during

the demonstration and inspection phase of the certification process), there are necessarily some items that cannot be inspected. For example, an applicant for an agricultural aircraft operator's certificate would not have a certificate or certificate facsimile examined. For an original certification, the inspector marks the "N/A" column on the job aid (figure 117-1) for items that cannot be evaluated.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task requires coordination with the airworthiness unit.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- 14 CFR parts 1, 61, 91, and 137
- PTRS Procedures Manual (PPM)

B. Forms:

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet

C. Job Aids:

- Part 137 Base Inspection Job Aid (figure 117-1)

3. PROCEDURES.

A. Pre inspection Activities.

(1) Determine the need for the inspection.

- (a) District office work program schedule,
- (b) Requested by the regional office,
- (c) As a result of complaints,
- (d) As part of the certification process, or

(e) As per FAA Order 1800.56, Administration of Aviation Standards Activities-Program Guidelines.

(2) Determine if the inspection is to be conducted with or without notice to the operator. (Conduct initial certification inspections as per the submitted schedule of events.)

(a) If the inspection is to be conducted with notice to the operator, notify the operator by telephone of the day, time, and nature of the inspection. Record the notification on FAA Form 1360-33; and place it in the operator's file.

(b) If the inspection is to be conducted without notice to the operator, schedule the day and time.

(3) Review the district office file on the operator for previous violations, complaints, accidents, and other inspection reports. Note any areas which require special attention.

(4) Review with the airworthiness or avionics units for a plan of action and for any specific problem areas.

(5) Open PTRS file.

B. Conduct Base Inspection. Use the job aid in figure 117-1 to assist during the inspection.

(1) Inspect aircraft. (Airworthiness)

(2) Determine if chief supervisor and other pilots are qualified. (14 CFR § 137.19(b) and (c))

(a) Determine if knowledge and skill tests have been conducted and their results (14 CFR § 137.19(e)(1) and (2)(b)). For congested area operations, determine that each Pilot-in-Command (PIC) meets the experience requirements (14 CFR § 137.53(b)(1) and (2)).

(3) If the operator conducts congested area operations, determine that the congested area plan has been FAA approved as per chapter 120, Evaluate a Part 137 Congested Area Operations Plan.

(4) Determine that the applicant understands the limitations involved with agricultural aircraft operations, which includes:

- (a) Limitations on passenger carrying,
- (b) Weight and balance limitations,
- (c) Limitations on operating without position lights,
- (d) Limitations on dispensing in congested areas,
- (e) Limitations on not observing standard airport traffic patterns, and
- (f) Title 14 CFR § 91.119 limitations concerning ferrying to and from dispensing sites.

(5) Determine that commercial operator records meet the requirements of 14 CFR § 137.71.

(6) If all items in the inspection are satisfactory, note the outcome on the job aid.

(7) If the inspection is not satisfactory, inform the operator immediately. Note the outcome on the job aid. Confirm unsatisfactory items in writing to the applicant (figure 117-2). Initiate an enforcement investigation, if appropriate. (See chapter 182.)

C. Debrief Operator. Discuss with the operator any areas needing improvement. Additionally, if applicable, discuss areas which may require an Enforcement Investigative Report and the normal enforcement action process.

D. Inspection Reports. Place the job aid and a copy of any correspondence with the operator in the district office file for the operator.

E. PTRS. Close PTRS file.

4. TASK OUTCOMES. The satisfactory completion of this task results in either:

~~A. An indication in the district office file that all items were satisfactory, or~~

B. An indication in the district office file of unsatisfactory items.

5. FUTURE ACTIVITIES.

A. Additional inspections on follow-up items.

B. Additional inspections as per program guidelines.

C. Possible enforcement investigation when inspections reveal a violation of the 14 CFR or the conditions of the operating certificate.

**FIGURE 117-1
PART 137 BASE INSPECTION JOB AID**

14 CFR PART 137 CERTIFICATION JOB AID					
NAME OF OPERATOR:	CERTIFICATION TEAM				
	Name	Specially			
ADDRESS:					
ITEMS INSPECTED	INSP. INITIAL	DATE	SAT	UNSAT	N/A
1. Certificate conforms to district office copy					
2. Chief Supervisor same as district office records					
3. Operator uses appropriate aircraft					
a. Aircraft certificated and airworthy					
b. Aircraft equipped for agricultural operations					
c. Inspection of load-carrying or attaching devices					
d. Inspection of optional equipment installation					
e. Airworthiness directives current					
f. Inspection of installation and function of spray or diffusion dry dispersal equipment and jettisoning device					
g. In-house or contract maintenance observed					
h. Any minimum equipment lists (MEL) current and appropriate					
i. Certificate facsimiles on board all aircraft used in agricultural operation					
4. Chief supervisor and other pilots					
a. Airman and medical certificate appropriate					
b. Knowledge test passed (14 CFR § 137.19(e)(1))					
c. Skill test passed (14 CFR § 137.53(e)(2))					
d. Pilots used in congested area operations meet requirements of 14 CFR § 137.53(b)(1) and (2)					
5. Congested area operations conducted					
a. Operator has FAA approved plan					
b. Plan includes approval by appropriate government officials					
c. Plan provides for ATC coordination, if required					
d. Plan includes a complete description of the operation					
e. Plan lists all aircraft used by make and model and N-number					
f. Plan lists all pilots used by name, certificate grade, and certificate number					
g. Plan includes appropriate maps, charts, and diagrams					
h. Plan has a specific method for halting operation for real or apparent hazards					
i. Plan clearly describes who is conducting the operation and what is being contracted					

FIGURE 117-1
PART 137 BASE INSPECTION JOB AID - Continued

ITEMS INSPECTED	INSP. INITIAL	DATE	SAT	UNSAT	N/A
6. The operator conforms to					
a. Prohibitions on passenger carrying					
b. Weight and balance limits					
c. Limitations on operating without position lights					
d. Limitations on dispensing in congested areas					
e. Limitations on not observing standard traffic patterns					
f. Limitations on restricted category aircraft, if used (14 CFR § 91.313(b) and (c))					
g. Title 14 CFR § 91.119 limitations on ferrying to and from dispensing sites					
7. Commercial Operator Recordkeeping					
a. Name of each person provided service					
b. Date service provided					
c. Name and quantity of material dispensed					
d. Name of each pilot used and date 14 CFR § 137.19(e) was met					
e. Records kept for at least one calendar year					
8. Bona Fide Property Interest (Private Operators)					
REMARKS: _____					

Inspector's Signatures:					

FIGURE 117-2
LETTER TO OPERATOR CONFIRMING UNSATISFACTORY ITEMS

[FAA Letterhead]

[Date]

[Operator's name and address]

Dear [Operator's name]:

This letter is to confirm those items that were unsatisfactory in the base inspection conducted on [indicate date].

[The inspector should list each item and indicate:

- (a) whether sufficient corrective action has been taken by the operator,
- (b) that enforcement action may be initiated, and
- (c) if a follow-up inspection is required to determine if corrective action has been completed when that inspection will take place.]

Sincerely,

[Certification Project Managers signature (if initial certification) or Principal Operations Inspector's signature (if surveillance of an established operator)]

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CHAPTER 118. ADMINISTER A KNOWLEDGE AND SKILL TEST TO AN AGRICULTURAL PILOT

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1579

2. OBJECTIVE. The objective of this task is to determine that the pilots used by a private or commercial agricultural aircraft operator are qualified to act as Pilot-in-Command (PIC) of an agricultural aircraft. An inspector's completion of this task should result in an indication that the PIC can conduct his job in a satisfactory or unsatisfactory way.

3. GENERAL. When required by Title 14 of the Code of Federal Regulations (14 CFR) part 137 § 137.19(e), the applicant or person who supervises agricultural aircraft operations shall be examined to determine that he or she possesses satisfactory knowledge to conduct those operations safely. An applicant citing 14 CFR § 137.41(c) may still be examined to determine that he or she possesses the knowledge required to dispense agricultural materials and chemicals safely, if the record of operation raises any doubt concerning the pilot's competence. The inspector may take into consideration, when making the determination of competency of any agricultural aircraft pilot, state-required tests passed by the applicant. For example, based on a pilot's recent state test, an inspector may determine that a knowledge test is not necessary.

A. Location of Test. The skill test may be conducted over an area mutually agreeable to the applicant and the inspector.

B. Location of Inspector During Test. The operations inspector shall observe this test from the ground. Under no circumstances should the inspector ride with the applicant during the skill test.

C. Flight Helmet. The Federal Aviation Administration (FAA) encourages pilots to wear a U.S. Department of Transportation (DOT) approved or Military Specifications (MIL-SPEC) flight helmet when operating agricultural aircraft in dispensing operations.

D. Suitable Material to be Dispensed During Test. For the purpose of the skill test, the aircraft's tanks or hoppers shall be loaded with any suitable material, e.g., water, lime, or sand.

(1) Loading shall be to the maximum certificated takeoff weight or the maximum weight established for the special purpose load, whichever is greater. A reduced load could be used in conditions of high density altitude.

(2) Before conducting the skill test, the inspector shall have the operator verify that the dispensing equipment does not contain chemical residue (a herbicide or other agricultural chemical) which may cause damage or create a hazard to the area where the test is conducted.

E. Reasons for Conducting Knowledge and Skill Test. This task may be performed during initial certification of a part 137 applicant. It may also be conducted at the request of a part 137 operator or pilot.

F. Not Dispensing Economic Poisons. If the operator does not apply for authorization to dispense economic poisons, the inspector shall not test the applicant on 14 CFR § 137.19(e)(ii) through (iv). The statement of competency issued must reflect this.

4. GUIDANCE FOR THE KNOWLEDGE TEST.

A. Test Development. The examining inspector develops questions from the following topics to determine the applicant's or chief supervisor's knowledge of such operations.

(1) The knowledge test may be oral or written, at the option of the person administering the test. A sample written test and its answer key can be found in figure 118-1. This sample should be considered representative of a written test covering the required areas of knowledge.

(2) District offices are encouraged to develop their own written tests and answer keys, if they desire to use that method of evaluating the applicant's knowledge. Any written test, whether the sample provided in

figure 118-1 or one developed by the district office, becomes known after it has been administered several times. The test will need to be updated periodically to reflect changes in regulations, new pesticides, etc.

B. State Test Results. Inspectors may accept results of any state or local knowledge test as a portion of the FAA knowledge test, provided the pilot can produce bona fide test results or a license issued by the certifying agency.

5. OPERATIONAL SAFETY ISSUES WHICH MAY BE DISCUSSED WITH THE APPLICANT.

The applicant should be familiar with the following subject areas.

A. Contamination Protection. The applicant should have satisfactory knowledge regarding the methods used to safeguard the pilot against contamination and the safe handling of economic poisons that the pilot dispenses. (For information on the relative toxicity of economic poisons, an LD⁵⁰ explanation is included in chapter 115.)

(1) An aerial applicator pilot who is engaged in the actual application of economic poisons should be knowledgeable of the hazards of the pilot's mixing or loading highly toxic poisons. Special emphasis should be placed on this job function when the economic poison is being used in an undiluted form.

(2) The pilot should be able to conduct a ground crew briefing concerning economic poisons and the need to wear protective clothing such as rubber gloves, apron, boots, and a respirator when handling materials that require them. (If a respirator is required, it should be the type which protects the wearer against the particular pesticide being handled.) The pilot should also be able to brief flaggers when used, concerning the potential hazard of the pesticide being dispensed, and should indicate that they be equipped with appropriate protective equipment.

(3) Pilots should also be aware that persons working closely with or handling pesticides should change clothes and bathe at the end of the operation or immediately if pesticide gets on their skin. Clean work clothes should be worn daily.

(4) The pilot must be knowledgeable about procedures to prevent contamination of the water sources if water is obtained from streams or ponds for mixing purposes. The pilot must know state and local laws concerning spillage.

(5) The pilot should be knowledgeable about how often aircraft and spray equipment should be cleaned, e.g., daily or as often as required to remove accumulation of pesticide residue. When aircraft are cleaned, the pilot should be aware of state and local laws concerning drainage into a sewer, ditch, pond, stream, or other body of water, or the location of approved disposal sites.

B. Container Disposal. The applicant should be knowledgeable about recommended methods for disposing of used pesticide containers. Environmental Protection Agency (EPA) approved methods for disposal are contained on the pesticide label. State and local laws, however, may require additional precautions, and it would be useful for the inspector to be aware of them. Local extension agents or an EPA office can be of assistance in this area.

C. Economic Poison Labeling. Economic poisons manufactured for interstate use are required by the U.S. EPA regulations to be registered with that department. Those poisons are also required to be labeled, showing the brand name, active ingredients, inert ingredients, directions for use, warning, net contents, and name and address of manufacturer or registrant. The label normally contains other detailed instructions concerning the effects on plants, animals, and persons. Therefore, when required by 14 CFR § 137.19(e), the applicant must possess a satisfactory knowledge concerning the general effects and precautions to be observed as described on the label of the economic poisons normally used in the area where the applicant conducts operations.

D. Detecting Contamination. The requirements contained in 14 CFR § 137.19(e)(1)(iv) should not be interpreted as FAA encouragement or endorsement of self diagnosis. Rather, it is a requirement that the agricultural pilot possess sufficient knowledge of the primary symptoms of poisoning to motivate seeking immediate professional medical attention when an element of doubt exists concerning contamination.

E. Decontamination Steps. Decontamination should be accomplished in accordance with the manufacturer's labeling and instructions.

F. Poison Control Centers. The location of Poison Control Centers in the United States may be found in the most recent issue of the Directory of Poison Control Centers, a publication from the U.S. Department of Health and Human Services (HHS). A local HHS office may also have a copy. In addition, several

chemical hotlines are available for the use of persons handling chemicals. Inspectors may wish to provide these names and telephone numbers to agricultural operators, who do not already have them.

(1) *The National Pesticide Telecommunications Network* operates a toll-free hotline, 1-800-858-PEST, which is staffed 7 days a week, from 6:30 a.m. to 4:30 p.m., PST. Qualified personnel are available to answer questions about pesticides. Information can be obtained about treatment by a physician after contamination or suspected contamination. The location of the nearest poison control center, clean-up of a pesticide spill, and other related information is also available on the internet at www.ace.orst.edu/info/nptn.

(2) CHEMTREC (Chemical Transportation Emergency Center) offers emergency phone service 24 hours a day, seven days a week. In the event of an incident or accident involving pesticides, CHEMTREC is able to provide emergency response information pertaining to chemical spills. In emergency situations, call 1-800-424-9300. For non-emergency, general information, or referrals, call 1-800-262-8200. Non-emergency telephones are staffed from 9:00 a.m. to 6:00 p.m., EST, Monday through Friday. They also maintain a web site at www.chemtrec.org.

G. Preflight. In addition to the preflight action required by 14 CFR part 91 § 91.103, the following steps should be taken before starting agricultural aircraft operations:

(1) If obstructions to flight include structures, trees, unfavorable terrain, housing areas, etc, and the pilot has not previously or recently worked the particular area, it may be useful to be given a description of the area to be treated by a person familiar with that area and/or conduct a ground survey.

(2) A ground survey may be useful when a pilot finds it necessary to fly under wires.

H. Aerial Survey of the Area to be Treated. When the pilot reaches the vicinity of the target area, he or she should carefully inspect the area from the air.

(1) The area immediately surrounding the working area should be surveyed to determine that the material dispensed will not cause damage to persons or property on the surface. The engine and propeller noise emitted as the pilot executes a pull-up and turnaround over these areas may result in damage to some enterprises. The adjacent area should also be investigated for fish ponds, lakes, and streams because

certain economic poisons may have a lethal effect upon fish and wildlife.

(2) The pilot should make a determination if the area to be treated could be considered to be a congested area. He or she should be familiar with the provisions of 14 CFR § 137.51 for operating over a congested area.

I. Airplane Operating Limitations. The pilot must have adequate knowledge of operating limitations for the aircraft to be used in accordance with the applicable requirements contained in 14 CFR § 91.9. Special emphasis should be placed on weight and balance information. If the applicant conducts operations using helicopters, the applicant should understand that the Height/Velocity diagrams do not provide information for weights above the maximum certificated gross weight. The applicant must also be familiar with aircraft performance capability, provided performance data have been established for the aircraft to be used. Knowledge about performance shall include such items as:

(1) Stall speeds at maximum certificated gross weight, straight ahead, power off, flaps up (V_{S1});

(2) Best rate (V_y) and best angle (V_x) of climb speed;

(3) Maneuvering speeds;

(4) Density altitude and its effect on performance; and

(5) Takeoff distance required to clear a 50-foot obstacle, maximum certificated gross weight, with zero wind.

J. Safe Application Procedures. The applicant should be knowledgeable about safe flight and safe application procedures during agricultural operations.

(1) The pilot should be familiar with the hazards associated with dispensing materials which may be flammable.

(2) When conducting operations over sloping terrain, caution should be exercised relative to the direction of swath runs. Flying up the slope may result in stalling the aircraft before reaching the end of the swath run or contribute to an inadvertent stall during the pull-up or turnaround.

(3) Pull-ups and turnarounds are normally made on the downwind side of the centerline of the swath run. However, unfavorable terrain, wires, guy

wires, poles, trees, or other obstructions may require pullups and turnarounds to be made on the upwind side. If a no-wind condition exists, it is usually the best procedure to make the turn into an open area (if available) in the event of power loss or engine failure.

(4) The aerial applicator pilot should avoid diversion of attention during a swath run. Not doing so may result in allowing the aircraft to fly into the ground or other obstruction.

(5) The aerial applicator pilot may have a tendency to apply forward pressure on the elevator control or cyclic control (on a helicopter) when flying under wires. Such a tendency should be avoided because once any part of the structure of the aircraft (wheels, skids) becomes entangled in crop foliage, it may be difficult, if not impossible, to prevent the aircraft from being pulled to the ground. The vertical fin may also contact the wires as the aircraft passes underneath them. Pilots of airplanes and especially helicopter pilots may choose not to fly under wires and dress-up the field parallel to the wires.

(6) When two or more aircraft are used in applying chemicals to a field, the pilots conducting the

operations should be encouraged to make arrangements between themselves concerning who performs the clean-up swaths or trim passes, when applicable. Mid-air collisions have occurred between aircraft conducting team operations when such coordination has not been accomplished.

(7) When using Global Positioning System (GPS) swath marking equipment, extreme caution should be used to prevent diverting attention away from the task of flying the airplane safely. The pilot should make it a practice not to make adjustments to the computer while in the swath run. The pilot should plan the turn using only reference to the light bar instead of fixating on it.

K. Night Operations If the operator conducts night operations, the pilot should have knowledge of night operations. Refer to chapter 117, Conduct a Part 137 Base Inspection, for test areas.

6. SKILL TEST. The skill test shall be accomplished using the content guidance shown in section 2, paragraph 3H.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task may require coordination with the airworthiness unit. This task may be performed by the operator's chief supervisor.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- 14 CFR parts 1, 61, 91, and 137
- Advisory Circular (AC) 137-1, Agricultural Aircraft Operations

B. Forms:

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet
- FAA Form 8710-1, Application for Airman Certificate or Rating

C. Job Aids:

- Sample letters and figures

3. PROCEDURES.

A. Need for Knowledge and Skill Test. Determine if the pilot needs the knowledge and skill test or has been previously qualified under part 137.

(1) If the test is not required or can be conducted by the operator's chief supervisor, record the outcome on FAA Form 1360-33. Place this in the district office file for the operator. Do not open a Program Tracking and Reporting Subsystem (PTRS) file for this task.

(2) If a test is required, provide applicant with a copy of FAA Form 8710-1 and schedule a date and time for the test.

B. PTRS File. Open PTRS file for this task.

C. Review Application. After arriving for the test, examine FAA Form 8710-1 for completeness and accuracy.

(1) Ensure that the applicant has checked other under Section I, Application Information, and entered Agricultural Aircraft Pilot Test in the blank provided.

(2) Ensure that the applicant has filled out Section I, A through U. If "U" has been checked yes, "V" must also be filled out.

(3) Ensure that the applicant has filled out Section IIA, 1, 2a, and 2b.

(4) The applicant does not need to fill out Section III, Record of Pilot Time.

(5) Ensure that the applicant has checked either yes or no in Section IV.

(6) Ensure that the applicant has signed and dated the application in Section V.

(7) No instructor's recommendation is required on the reverse side of FAA Form 8710-1.

D. Pilot Certificates. Inspect pilot certificates and insure the pilot has:

(1) An appropriate and current medical certificate, and

(2) An appropriate pilot certificate with category and class ratings as required (14 CFR § 137.19).

E. Knowledge Test. Conduct oral and/or written examination on the subject matter specified in 14 CFR § 137.19(e)(1).

(1) If the oral or written test portion is failed, notify the pilot and operator. Confirm in writing (figure 118-2) and reschedule the knowledge portion of the test. On the reverse side of FAA Form 8710-1, check disapproved under the Inspector's Report section. Place FAA Form 8710-1 in the district office file on the operator. Do not forward it to Oklahoma City. The skill portion of the test may proceed at the inspector's option.

(2) If the oral or written test portion is satisfactory, proceed with the skill portion of the test. Discuss the sequence of events and the safety considerations for the skill portion of the test.

F. Aircraft Documents. Inspect the aircraft's documents. Ensure that the registration and airworthiness certificates are current and appropriate.

(1) N-number matches that on the registration certificate;

(2) Data plate information, serial number, airworthiness certificate, and registration certificate match each other and aircraft registry records; and

(3) Agricultural operator certificate facsimile on board, if knowledge and skill test is not conducted as part of initial operator certification.

G. Aircraft Conformity. Inspect aircraft for compliance with 14 CFR §§ 137.19(d), 137.31 (b), and 137.33(a) and (b) (airworthiness).

(1) Aircraft maintenance documents reflect that all required inspections have been accomplished, and

(2) Airworthiness directives are complied with.

H. Skill Test. Conduct the skill portion of the test (14 CFR § 137.19(e)(2)). The applicant is to be briefed and evaluated on piloting skill and operational judgment in the following:

(1) Ground crew coordination and loading procedures;

(2) Engine start, warm-up, and taxi procedures;

(3) Short field and soft field takeoffs (airplanes and gyroplanes only), directional control, lift-off, and climb;

(a) One takeoff at minimum speed, and

(b) One takeoff at V_X .

(4) Approaches to the working area;

(a) Satisfactory aerial survey of area for obstructions, and

(b) Proper method of beginning operations - normally, starting operation crosswind on downwind side of field.

(5) Flareout;

(a) Should not touch ground or crop during flareout, and

(b) Should be consistently at same height and proper position over field on several flare-outs.

(6) Swath runs;

(a) Consistent altitude (plus or minus 5 feet),

(b) Four or more passes demonstrated,

(c) Looking back at the spray pattern during swath run is disqualifying,

(d) Flight should be executed so as not to fly through the spray droplets or the dust of previous swath. Successive swath runs spaced so as to place the wing tip into or overlapping the vortices of the previous swath is not disqualifying, and

(e) Start and stop the spray application within the target area and prevent drift onto adjacent fields.

(7) Pull-ups and turnarounds;

(a) Consistent height in turnarounds, obstructions permitting,

(b) Smooth and coordinated,

(c) Turn in proper direction relative to wind, obstructions, and field layout,

(d) Obstruction clearance before starting turn, and

(e) Proper throttle and hopper or tank control.

(8) Clean-up swath or trim passes;

(a) Recognizes the need for clean-up swath, and

(b) Adequately covers area to be treated.

(9) Jettisoning of remainder of load after swath runs in the event of inflight emergency;

(10) Rapid deceleration or quick stops (helicopter only);

(11) Approach, touchdown, and directional control on landing; and

(a) One landing, and

(b) Adequate precautions used around turning propellers or rotor blades.

(12) Taxi, engine shutdown, and securing of aircraft.

I. Skill Test Unsatisfactory. If the applicant fails the skill portion of the test, notify the pilot and the operator. Confirm in writing (figure 118-2) and schedule a date and time for re-examination. On the reverse side of FAA Form 8710-1, Airman Certificate and/or Rating Application, check disapproved under the Inspector's Report section. Place FAA Form 8710-1 in the district

office file on the operator. Do not forward it to Oklahoma City.

J. Skill Test Satisfactory. When the applicant satisfactorily accomplishes the skill portion of the test, issue a letter of competency (figure 118-3) or make a logbook entry (figure 118-4). If a logbook entry is used, write a memorandum indicating satisfactory completion of the test for the office file. On the reverse side of FAA Form 8710-1, Airman Certificate and/or Rating Application, check the approved under the Inspector's Report section. Place FAA Form 8710-1 in the district office file on the operator. Do not forward it to Oklahoma City.

K. PTRS. Close PTRS work entry for this task.

L. District Office File. Place results of test in the district office file for that operator.

4. TASK OUTCOMES. Completion of this task results in either:

A. A logbook entry or letter of competency, or

B. A letter to the operator and/or pilot indicating failure of either the knowledge, skills, or both portions of the test.

5. FUTURE ACTIVITIES. Any future monitoring of a pilot after successful completion of a knowledge and skill test would be as part of a scheduled surveillance of the part 137 operator or as a result of a complaint, violation investigation, accident investigation, or in cooperation with other government agencies.

FIGURE 118-1
SAMPLE KNOWLEDGE TEST

1. Should a Pilot-in-Command of an agricultural aircraft assist in mixing and loading the aircraft when dispensing a highly toxic chemical?
2. When dispensing a highly toxic chemical, what instruction would you give your flagger, if one is being used?
3. What are some of the symptoms of chronic toxic effect, which is the cumulative buildup of chemical in the body?
4. How would you dispose of containers that held a toxic poison?
5. Where is the nearest poison control center?
6. If you have mild symptoms of organophosphate poisoning, can you administer the recommended antidote yourself and continue work until an appointment with a doctor can be arranged?
7. What emergency action would you take if a known contamination exists?
8. Indicate your swath runs and procedure turns over the following field, when dispensing a herbicide that could damage plants in the congested area.
{The field sketch is not shown here.}
9. Would you apply a chemical such as a highly toxic insecticide to this field? If so, how and when?
10. What wind direction would be required for applying a herbicide on the crop in the following field sketch?
{The field sketch is not shown here.}
11. How long should records required by 14 CFR § 137.71 be kept?
 - a. 6 months
 - b. 12 months
 - c. until the end of the season
 - d. indefinitely
12. While airborne, before starting your first swath run, what steps would you take?
13. In applying insecticides for insect control adjacent to a lake, stream, or fish-stocked earth tank, what precautions must be taken?
14. Does your agricultural aircraft operator's certificate allow you to fly under 500 feet over the top or closer than 500 feet horizontal to a farm while going to or from your base of operation and the field you are to treat?
15. What are the steps to be taken before you can dispense chemicals over a city, town, settlement, or other congested area?
16. Does your aircraft have to be inspected before you can engage in applying insecticide for insect control over a congested area?
17. In your procedure left turn; you misjudge your turn and roll out 300 feet to the right side of your intended course. How would you correct this error?
18. Your agricultural aircraft is required by 14 CFR part 137 to be equipped with a (circle one):
 - a. quantity tank gauge
 - b. shoulder harness
 - c. stall warning horn
 - d. boom pressure gauge
19. In order to dispense chemicals over a congested area, you are required by 14 CFR part 137 to have your aircraft equipped with which of the following:
 - a. stall warning horn
 - b. tank quantity gauge
 - c. emergency dump valve or chemical jettison device
 - d. boom pressure gauge
20. {Insert question about the performance characteristics of the aircraft to be flown - Perhaps weight and balance?}

FIGURE 118-1
SAMPLE KNOWLEDGE TEST - Continued

21. What certificate or certificates have to be carried on the aircraft engaged in agricultural aircraft operations?
Expand this selection

- a. registration
- b. facsimile of the agricultural aircraft operator's certificate
- c. both of the above

22. You are flying a restricted category agricultural aircraft with a belly unit and two seats. Can you use this aircraft for other purposes than agricultural operations?

23. Are you required to wear a crash helmet during operations?

24. Describe in detail, the dangers involved with a hot, heavy, downwind turn.

25. As your bank increases, what happens to your stall speed?

FIGURE 118-1
SAMPLE KNOWLEDGE TEST - Continued

ANSWER KEY

1. There is no absolutely correct answer to this question. Ideally, the pilot should not be the person who loads the chemical since the danger of contamination is possible. The person should respond in that manner.
2. Walk upwind at all times to avoid the drifting chemicals.
3. The specific symptoms will vary somewhat with the type of pesticide used. The pilot should also respond that the symptoms can be mistaken for other diseases before chronic toxic effect is suspected and that the effects are cumulative. Generally, the symptoms are nausea, vomiting, blurred vision, excessive sweating, among others.
4. The answer to this question would depend on the chemical in the containers but the important procedure is to read the manufacturer's label. Consult state or local regulations for additional guidance regarding the disposal of empty containers.
5. The answer would have to reflect the local area.
6. No.
7. The answer would depend upon the chemical, the location of the contamination, and any state or local requirements. Again it is important to refer to the manufacturer's label for guidance. Generally, the pilot should wash with soap and water. For small areas, use alcohol.
8. Spray runs and procedure turns should be depicted so that drift and/or aircraft do not overrun the congested area.
9. A less toxic chemical could be used if a substitute is available. If not, spray only when the wind is blowing away from the sensitive area.
10. From the south to the north.
11. b.
12. Survey the area.
13. A definite wind blowing away from streams, lakes, etc. Consult the label to determine if setback zones are recommended.
14. No.
15. Obtain prior written approval from the governing body of the jurisdiction, give public notice of the operation, and obtain an FAA approved plan.
16. Only the required annual and a 100-hour inspections (unless the annual was completed less than 100 hours prior to the congested area operation).
17. Pull up and reenter the swath run.
18. b.
19. c.
- 20.
21. b.
22. No.
23. No, it is not required by 14 CFR, but it may be a requirement in some states. However, the use of a helmet is recommended by the FAA.
24. As you start your procedure turn downwind.
25. Increases.

FIGURE 118-2
LETTER CONFIRMING FAILURE OF KNOWLEDGE AND SKILL TEST

[*FAA Letterhead*]

[*Date*]

[*Applicant's address*]

Dear [*applicant's name*]:

This is to inform you that on [*date*], you failed to satisfactorily demonstrate the required [*skill*] [*knowledge*] required by Federal Aviation Regulations part 137 to act as a pilot in aerial agricultural operations.

The areas of deficiency were:

[*Cite the areas.*]

Additional instruction or study in these areas is recommended.

Should you have any questions concerning this test, please contact this office.

Sincerely,

[*signature of inspector conducting the test*]

[*Send copy to supervisor of agricultural operations, if applicable.*]

**FIGURE 118-3
STATEMENT OF COMPETENCY LETTER**

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]

This is to certify that [*pilot's name*] holder of [*grade of certificate*] pilot certificate [*certificate number*] has on this date satisfactorily completed the knowledge and skill test for an agricultural aircraft pilot as specified under 14 CFR § 137.19(e) and is qualified to serve as Pilot-in-Command in agricultural aircraft operations.

[*He or she*] is [*is not*] authorized to dispense economic poisons.

Sincerely,

[*signature and title of FAA inspector or supervisor of agricultural operations, if applicable*]

FIGURE 118-4
SAMPLE LOGBOOK ENDORSEMENT

This is to certify that *[pilot's name]* holder of *[grade of certificate]* pilot certificate *[certificate number]* has on this date satisfactorily completed the knowledge and skill test for an agricultural aircraft pilot as specified under 14 CFR § 137.19(e) and is qualified to serve as Pilot-in-Command in agricultural aircraft operations.

[He or she] is *[is not]* authorized to dispense economic poisons.

[date]

[signature and title of FAA inspector or supervisor of agricultural operations]

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CHAPTER 119. INSPECT A PART 137 DISPENSING OPERATION

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1623

2. OBJECTIVE. The objective of this task is to determine that a private or commercial Title 14 of the Code of Federal Regulations (14 CFR) part 137 operator conducts a dispensing operation according to 14 CFR and operating certificate. Successful completion of this task results in an indication of satisfactory or unsatisfactory in the operator's district office file.

3. GENERAL. The need to inspect an operator's dispensing operation, which is the actual dispersal of chemicals on a specified area, may be a result of

programmed surveillance. The inspection may be a response to a complaint about an operator (see chapter 182, Conduct a Complaint Investigation). The inspector must consider the type of operation, whether a congested area is involved (which would include chapter 121, Monitor a Congested Area Operation), the operation is in daytime or nighttime, and etc.

4. INSPECTOR SAFETY CONSIDERATIONS.

The nature of agricultural chemicals is that they may be toxic. (see chapter 115, Introduction to Part 137 Related Tasks). Inspectors must take every precaution to assure they are not contaminated by exposure or spillage.

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SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of 14 CFR part 137 and Federal Aviation Administration (FAA) policies and qualification as an Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task may require coordination with the airworthiness unit.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, 91, and 137
- Program Tracking and Reporting Subsystem (PTRS) Procedures Manual (PPM)

B. Forms.

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet

C. Job Aids.

- Dispensing Operation Inspection Job Aid (figure 119-2)
- Agricultural Pilot Inspection Job Aid (figure 119-3)
- Agricultural Aircraft Inspection Job Aid (figure 119-4)
- Sample letters and figures

3. PROCEDURES.

A. Schedule Inspection. Coordinating with airworthiness, schedule a date and time for the inspection. Decide whether this inspection will be done with or without notice to the operator.

(1) If the inspection is to be conducted with notice to the operator, notify the operator by telephone or in writing.

(a) If the operator is notified by telephone, record the results on FAA Form 1360-33 and place it in the operator's file.

(b) If the operator is notified in writing or the telephone call is confirmed in writing, use figure 119-1.

(c) Review the district office file on the operator.

(2) If the inspection is to be conducted without notice to the operator, review the district office file on the operator.

B. Review Operator's File. Check the district office's file on the operator for previous violations, complaints, accidents, incidents, and other inspection reports. Note any areas which require special attention.

C. PTRS. Enter the appropriate PTRS code to open the task.

D. Job Aids. Use the Dispensing Operation Inspection Job Aid (figure 119-2), the Agricultural Pilot Inspection Job Aid (figure 119-3), and the Agricultural Aircraft Inspection Job Aid (figure 119-4) during the inspection.

(1) If a private operator, determine if the operator meets the requirements of 14 CFR §§ 137.19(b), (d), and (e).

(2) If a commercial operator, determine if the operator meets the requirements of 14 CFR §§ 137.19(c), (d), and (e).

(3) Determine if the operator has current copies of parts 91 and 137 (recommended, but not required).

(4) Determine if the operator knows the location of the nearest poison control center (recommended, but not required).

(5) Determine if the aircraft is airworthy and appropriately equipped (airworthiness).

(6) Determine if the pilots are appropriately certificated (14 CFR §§ 137.19 and 137.41).

(7) If a private operator, determine if the operator complies with appropriate limitations (14 CFR § 137.35).

(8) Determine if the operator has a record of informing all (appropriate) personnel of their duties and responsibilities (14 CFR § 137.41 (a)).

(9) Determine that the chief supervisor meets knowledge and skill requirements (14 CFR § 137.19(e)).

(10) Determine that the Pilot-in-Command (PIC) is appropriately certificated for the operation (14 CFR § 137.41 (c)).

(11) Determine that appropriate competency letters or logbook endorsements have been issued (14 CFR § 137.19).

(12) Determine that the operating name is the same as the name on the certificate (14 CFR § 137.55).

(13) Determine that the operator's address is the same as the one on file.

E. Inspection Satisfactory. If the inspection is satisfactory, note the outcome on the job aid.

F. Inspection Unsatisfactory.

(1) If the inspection is unsatisfactory, note the outcome on the job aid. If the unsatisfactory items involve a safety hazard, terminate the operation immediately in accordance with the method worked out with the operator.

(2) Note the unsatisfactory items on the job aid. Confirm in writing, those items with the operator (figure 119-5).

(3) Initiate an enforcement investigation as appropriate.

G. Debrief operator.

(1) Compliment the operator on all areas where the operator met or exceeded the standards.

(2) Discuss any unsatisfactory items and how to improve them.

(3) Discuss any unsatisfactory items, which may require an Enforcement Investigative Report

(EIR) and the normal enforcement action process, if applicable.

H. Inspection Reports. Place the job aid, any reports, and correspondence in the district office file on the operator.

I. PTRS. Make the appropriate PTRS work entries for:

- (1) Surveillance inspection
- (2) Any open items
- (3) Enforcement action

J. Airworthiness Deficiencies. If airworthiness deficiencies exist and an airworthiness inspector was not present, notify the airworthiness unit supervisor.

K. Other District Office Information. If applicable, mail a copy of the inspection report and other documentation to the operator's Certificate-Holding District Office (CHDO).

4. TASK OUTCOMES. Completion of this task results in either of the following:

A. Placing an indication that the inspection was satisfactory in the district office file on the operator.

B. Placing an indication that the inspection was unsatisfactory in the district office file on the operator.

5. FUTURE ACTIVITIES.

A. Depending upon the results of the inspection, schedule another inspection either at the programmed interval or earlier.

B. Follow-up on any open items.

C. Possible initiation of an enforcement investigation if the inspection was unsatisfactory.

FIGURE 119-1
LETTER TO OPERATOR CONFIRMING DATE, TIME, AND LOCATION OF DISPENSING
INSPECTION

[FAA Letterhead]

[Date]

[Operator's name and address]

Dear *[operator's name]*:

This letter is to confirm our telephone conversation on *[date]* to the effect that an inspection of your operations will be conducted on *[date of proposed inspection]*. Enclosed is a copy of the inspection aid that will be used to assist in determining whether this operation is in compliance with Title 14 of the Code of Federal Regulations (14 CFR) part 137.

Should you have any questions concerning this inspection or will not be available on the above date, please notify this office at *[telephone number]*.

Sincerely,

[Principal Operations Inspector's signature]

**FIGURE 119-2
DISPENSING OPERATION INSPECTION JOB AID**

NAME AND ADDRESS OF OPERATOR		CERTIFICATE NUMBER		DATE OF INSPECTION	
LOCATION OF INSPECTION		INSPECTORS			
ITEM INSPECTED		14 CFR REF	SAT	UNSAT	N/A
1. Private operator meets appropriate requirements.		§ 137.19(b)(d)(e)			
2. Commercial operator meets appropriate requirements.		§ 137.19(c)(d)(e)			
3. Operator has copies of 14 CFR parts 91 and 137 (recommended).		not required			
4. Nearest poison control center location known (recommended).		not required			
5. Aircraft inspection.		§ 137.53(c) or § 91.405			
6. Restricted aircraft operating limitations.		§ 91.313			
7. Weight placard on hopper.		not required			
8. Airman certificates and pilot qualifications.		§§ 137.19, 137.41			
9. Aircraft equipped for dispensing.		§§ 137.19(d), 137.31(a)			
10. Shoulder harness.		§§ 137.31(b), 137.42			
11. Helmet - DOT/MIL SPEC (recommended).		not required			
12. Facsimile of certificate on board each aircraft used.		§ 137.33(a)			
13. Airworthiness and registration certificates inspected.		§ 137.33			
14. Private operator complies with limitations.		§ 137.35			
15. All personnel aware of duties and responsibilities.		§ 137.41(a)			
16. Supervisors meet knowledge and skill requirements.		§ 137.17(e)			
17. Pilot-in-Command appropriately certificated for operation.		§ 137.41(c)			
18. Pilots have competency letters or logbook endorsements.		§ 137.19			
19. Operating name same as business name.		§ 137.55			
20. Pilots meet knowledge and skill requirements.		§ 137.19(e)			
21. Operator's address same as on file.		not required			
22. Other items.					

FIGURE 119-2
DISPENSING OPERATION INSPECTION JOB AID - Continued

[illegible]

For pilot certificate (GR), use: P-Private, C-Commercial, A-Airline Transport.

FIGURE 119-4 AGRICULTURAL AIRCRAFT SURVEILLANCE JOB AID

[illegible]

FIGURE 119-5
LETTER TO OPERATION CONFIRMING UNSATISFACTORY ITEMS

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to confirm those items that were unsatisfactory at the satellite site inspection conducted at [*location*] on [*date*] and the present status of those items:

[*The inspector should list each item and indicate:*

- *whether sufficient corrective action has been taken by the operator.*
- *that enforcement action may be initiated if no corrective action is taken by the operator.*
- *if a follow-up inspection is required to determine if corrective action has been completed, and when that inspection will take place.]*

Sincerely

[*Principal Operations Inspector's signature*]

CHAPTER 120. EVALUATE A PART 137 CONGESTED AREA OPERATIONS PLAN

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1332

2. OBJECTIVE. The objective of this task is to determine that a Title 14 of the Code of Federal Regulations (14 CFR) part 137 operator can conduct agricultural dispensing operations safely over a congested area, according to an approved plan. Successful completion of this task results in either approval or disapproval of an operator's proposed plan.

3. GENERAL. Agricultural aircraft may operate over congested areas if prior written approval is obtained from the appropriate official or governing body of the political subdivision over which the aircraft is to be operated.

A. Appropriate Officials. An appropriate elected public official or governing body can include any of the following:

- (1) Mayor,
- (2) City Manager,
- (3) City Council,
- (4) County Board of Supervisors,
- (5) County Commissioner, or
- (6) Any other similar elected public official.

B. Public Notice. If time allows, the public notice required by 14 CFR § 137.51(b)(2) should be given at least 48 hours before dispensing operations begin. The form that the public notice takes is up to the operator. Newspaper ads, radio announcements, television announcements, or door-to-door handbills are all acceptable methods.

C. Contents of Congested Area Plan. Consider the following when reviewing the plan of operation required by 14 CFR § 137.51(b)(3) and submitted by the operator.

- (1) The plan must include an aerial photograph, large scale map, or computer generated map or

diagram of the area to be worked. Whichever depiction is used, it should be appropriately marked to show all obstructions which could normally be expected to present a hazard during the operation and the areas which could be used for an emergency landing and dumping of agricultural materials.

(2) The photograph, map, or diagram must be current, preferably within the preceding 24 months, to be considered representative of the area. If current photographs or diagrams are not available, realtor's maps may be used to supplement. The important aspect is not to accept crudely drawn maps that do not show actual scale distances.

D. Assisting Operators. Occasionally agricultural aircraft operators may request Federal Aviation Administration (FAA) assistance in determining whether an area is congested or not. Before the FAA can determine this, the site will have to be checked. The FAA cannot, of course, check every area an operator wants to service, but in some cases an operator needs legitimate assistance. The inspector must use judgement in determining the status of an area as congested or not. If the inspector has any doubt, he or she should consult with other inspectors or regional counsel for any precedent.

4. SINGLE-ENGINE AIRCRAFT. When congested area operations are conducted using single-engine aircraft, the inspector shall require the operator to arrange with appropriate officials of the area concerned to take such measures as are necessary to conduct the operation safely. These may include blocking off streets and other areas which could be used as an emergency landing or similar precautionary measures required in the interest of public safety. Before approving any operator's plan of operation, the inspector shall determine that the plan complies with the requirements contained in 14 CFR § 137.51(b)(4)(iii).

5. MULTIENGINE AIRCRAFT.

A. Takeoff Performance. Before approving the conduct of operations over a congested area using

multiengine airplanes, the operator must prove that the airplane to be used can be operated in accordance with the performance requirements in 14 CFR § 137.51(b)(5)(ii). If it is necessary to take off over a congested area during dispensing operations, such ~~evidence will also be required to determine compliance with 14 CFR § 137.51(b)(5)(i).~~ If the aircraft cannot meet these requirements, the operator must state in the written plan of operation that no takeoff will be made over a congested area during dispensing operations.

B. Critical Engine Inoperative. Before approving the conduct of multiengine airplane operations over a congested area, the inspector shall require the operator to present conclusive documentary evidence that the airplane to be used can be operated in accordance with the performance requirements specified in 14 CFR § 137.51(b)(5)(ii).

6. RESTRICTED CATEGORY AIRCRAFT.

Title 14 CFR part 21, or the operating limitations established for the airplane, may not require a flight manual for restricted category aircraft. Therefore, performance information may be found in the applicable military technical order, operating limitations, placards, flight test performance data established by the aircraft manufacturer, or any combination thereof. In addition, performance information provided by a designated engineering representative is satisfactory. If such performance information has not previously been established for the airplane to be used or, if any doubt exists concerning the authenticity of the information presented by the operator, a Manufacturing Inspection District Office (MIDO) should be contacted to arrange for an engineering flight test in order to obtain the required performance data.

7. LOAD JETTISONING. Should questions arise concerning the load jettisoning capability of the aircraft used in congested area operations, the operator should be required to present jettisoning test data which show that the aircraft is equipped with a device capable of jettisoning at least one-half the aircraft's maximum authorized load of agricultural materials within 45 seconds.

A. Data Not Determined. If such data have not been determined for the aircraft or, if any doubt exists concerning meeting this requirement, the inspector should have the operator conduct an in-flight load jettisoning demonstration.

B. Test Conditions. The aircraft must be loaded with any suitable material, e.g., lime, sand, water, etc., and the demonstration shall be observed by the inspector from the ground. The discharge of material from the aircraft should be timed to determine compliance with the 45-second jettisoning requirement.

C. Rotorcraft. Jettisoning does not apply to helicopters (14 CFR § 137.53(c)(2)).

D. Preventing Inadvertent Jettisoning. Title 14 CFR § 137.53(c)(2) requires that aircraft conducting agricultural operations over congested areas must have a means of preventing inadvertent jettisoning of the load from the tank or hopper. This can be accomplished with a device such as:

- (1) Spring-loaded cover over a pull lever,
- (2) "T" handle or pull ring in a spring loaded shield,
- (3) A push-pull device fastened with fine safety wire, or
- (4) Other equivalent devices.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of 14 CFR part 137 and Federal Aviation Administration (FAA) policies and qualification as an Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task may require coordination with the airworthiness unit, the regional counsel, state, county, or local authorities.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, 91, and 137
- Advisory Circular (AC) 137-1, Agricultural Aircraft Operations

B. Forms.

- FAA Form 1360-33, Record of Conference Visit, or Telephone Call
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet

C. Job Aids.

- None

3. PROCEDURES. After a part 137 operator requests district office approval for a congested area operation, determine the need for congested area plan based on location, type of operation, etc. (14 CFR § 137.51 (b))

A. Plan Not Required. If a plan is not required, record discussion on FAA Form 1360-33 and place it in the operator's district office file. Do not open a Program Tracking and Reporting Subsystem (PTRS)

B. Plan Required. If a plan is required, requirements of 14 CFR §§ 137.51 and 137.53 are as follows:

(1) Instruct the operator to present the plan to the district office for review.

(2) Remind the applicant of the requirement to coordinate with the appropriate state, local, or municipal authorities (14 CFR § 137.51).

(3) Discuss with the applicant various methods of public notification, such as newspapers, radio, and handbills.

C. PTRS. Open PTRS file.

D. Plan Requirements. Upon receipt of the operator's plan, ensure that the operator has included the following information:

(1) A current aerial photograph, current map, or a recently drawn diagram of the area to be worked;

(a) Any representation must show all obstructions which may present hazards during operation.

(b) Potential areas for emergency landing or dumping of agricultural materials must also be indicated.

(2) Altitudes to be maintained, approaches, departures, and turnaround considerations during operation.

(3) Name and type of material to be dispensed;

(4) Type of pest or work to be accomplished;

(5) Dates and hours of dispensing operations;

(6) Coordination with air traffic control.

(7) Special operating procedures or limitations to ensure safe operations near schools, parks, free-ways, etc;

(8) Method of public notification;

(9) An indication of coordination with the appropriate state, local, or municipal authorities (figure 120-1); and

(10) Methods for complying with 14 CFR §§ 137.51 (b)(4) and (5) and 137.53 (c)(2).

(a) Arrangements for blocking off streets and other areas which may be used for emergency landings.

(b) Observe the load jettisoning demonstration from the ground if jettisoning test data is not available or in doubt. For multiengine aircraft, refer to 14 CFR § 137.51 (b)(5).

(11) Means for terminating the operation in the event of an emergency or at the inspector's discretion.

E. Pilot Qualifications. The plan must indicate the qualifications (14 CFR parts 61 and § 137.53) of the pilot to be used in the operation.

F. Aircraft Requirements. The plan must include information that indicating that the aircraft meets the requirements of 14 CFR part 91, and 14 CFR §§ 137.31, 137.33, 137.51, and 137.53.

G. Plan Approved. When the plan meets all Title 14 CFR requirements, all safety considerations, and appropriate coordination requirements, approve the plan in writing (figure 120-2). Each page of the plan is stamped "FAA-approved," dated, and signed by the Principal Operations Inspector (POI).

(1) Forward a copy of the approved plan to the operator.

(2) Place a copy of the plan in the district office file on the operator.

H. Plan Not Approved. If the plan cannot be approved, issue a letter disapproving the congested area plan (figure 120-3).

I. PTRS. Make appropriate PTRS work entry.

4. TASK OUTCOMES. Completion of this task results in either:

A. An approved congested area plan, or

B. Issuance of a letter disapproving the congested area plan.

5. FUTURE ACTIVITIES.

A. Schedule monitoring of congested area plan if the task is in work program plans.

B. Monitor congested area plan (see chapter 121, Monitor a part 137 Congested Area Operation).

C. Possible enforcement investigation if the operation is not conducted according to the approved plan or is in any other manner unsatisfactory. Use the approved plan as information for a subsequent enforcement investigation.

D. Review of any subsequent congested area operations.

FIGURE 120-1
SAMPLE LETTERS INDICATING COORDINATION WITH APPROPRIATE AUTHORITIES

(To Agricultural Aircraft Operator)

[Operator's name and address]

I, [name], the [title of individual and name of town] grant permission to [name of operator] to fly over the town of [name of town] for the purpose of [state purpose of operation] from an agricultural aircraft on [date of operation].

[official's signature]

(To Federal Aviation Administration)

[Operator's Letterhead]

[Date]

[Name and address of district office]

Sir or Ma'am:

[Name of operator] will conduct the dispensing operation, described on the attached diagram, per Title 14 of the Code of Federal Regulations § 137.51. The aircraft used will be a [make and model of aircraft and N number].

The dispensing operation will be conducted at no less than [altitude] feet above ground level. The airspeed will be [speed in knots or mph].

[Chemical name] will be dispensed at the rate of [number of gallons] per acre.

The operation will be conducted from [beginning date] to [ending date].

The public will be notified of the operation [indicate methods of notification] on [date].

Sincerely,

[Operator's signature]

FIGURE 120-2
LETTER APPROVING CONGESTED AREA PLAN

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator*]:

The congested area plan for agricultural aircraft operations, which you submitted on [*date*], is approved with the following provisions:

[*Examples of special provisions:*

- *Plan is valid only for a specific date or dates and place;*
- *Indicate the boundaries of the congested area involved;*
- *Plan is valid until signed agreement with appropriate officials of the political subdivision expires;*
- *Indicate the specific category and class of aircraft to be used;*
- *Plan is limited to specific weather conditions, i. e., wind direction; and*
- *Specify an expiration date for this approval.]*

Sincerely,

[*Principal Operations Inspector's signature*]

FIGURE 120-3
LETTER DISAPPROVING CONGESTED AREA PLAN

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This is to inform you that the congested area plan, which you submitted on [*date*], for agricultural aircraft operations over [*congested area, city, or town*] is not approved.

The following items were unsatisfactory:

[*List the items and how they must be corrected.*]

If you have any questions concerning this matter or intend to take action to correct these items, please contact this office at [*telephone number*].

Sincerely,

[*Principal Operations Inspector's signature*]

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CHAPTER 121. MONITOR A PART 137 CONGESTED AREA OPERATION

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1623

2. OBJECTIVE. The objective of this task is to ensure that an agricultural aircraft operator conducts a congested area operation according to an Federal Aviation Administration (FAA)-approved plan. Successful completion of this task results in an indication of satisfactory or unsatisfactory, in the district office file.

3. GENERAL. For background information, refer to section 1, chapter 120, Evaluate a Part 137 Operator

Congested Area Plan. Before observing any congested area operation, the inspector shall review the operator's approved congested area plan and Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.51. This provides the inspector with insight as to what the operator intends to do and the emergency precautions that have been established. The operator must follow this plan without exception. The operator must also be able to provide the inspector with information that confirms or verifies that appropriate notification to the public has been given.

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SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of 14 CFR part 137 and FAA policies and qualification as an Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task may require coordination with the airworthiness unit, air traffic control, and the operator's Certificate-Holding District Office (CHDO), if the operation is taking place in a different jurisdiction.

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, 91, and 137
- Operator's approved congested area plan

B. Forms.

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet

C. Job Aids.

- Operator's approved congested area plan.
- Sample letters and figures.

3. PROCEDURES.

A. Plan Review. Review operator's approved congested area operation plan.

(1) Ensure that it has been FAA approved.

(a) Each page of the plan should be stamped, FAA Approved.

(b) Each page of the plan should also be stamped with the date of approval and signed by the principal operations inspector.

(2) Coordinate with the inspector who approved the plan to discuss any special considerations, problem areas, operator history, etc.

B. Program Tracking and Reporting Subsystem (PTRS). Open PTRS file.

C. Additional Coordination. Coordinate as necessary with the airworthiness unit, the operator, or any local officials.

(1) If appropriate, arrange for an airworthiness inspector to monitor the operation also.

(2) Verify that the operator has, indeed, coordinated with the appropriate local authorities (see chapter 120, Evaluate a Congested Area Plan). The applicant must have provided names, titles, and telephone numbers in the approved plan.

(3) Make any necessary arrangements with the operator or local authorities to meet some time before the operation begins to review the sequence of events.

D. Document Review.

(1) Inspect pilot and medical certificates of pilots involved in the operation.

(a) Pilots must have at least a commercial certificate.

(b) Pilots must have at least a second class medical.

(c) Pilots must have 25 hours Pilot-in-Command (PIC) in make and model, with 10 hours in the last 12 months.

(d) Pilots must have 100 hours PIC in agricultural aircraft operations.

(2) Inspect the airworthiness certificate and aircraft registration, if available.

(3) Determine that the certificate facsimile is on board the aircraft.

(4) Determine that flight crewmembers and ground personnel understand their duties and responsibilities, as indicated in the approved plan.

E. Safety Considerations. Before the operation begins, review with the operator the approved plan's safety considerations, including measures for terminating the operation in the event of an emergency or at the inspector's discretion. The means for terminating the operation should have been established in the approved plan.

F. Observe the Actual Operation. Use the approved congested area plan as a job aid to determine that the operator is in compliance. Inspectors should make themselves available to observe congested area operation, however, if they are unavailable, this should not be used to delay the operation.

(1) If the operation is in compliance, write "Operation Satisfactory" on the approved congested area plan.

(2) If the operation is not in compliance, note the areas of noncompliance to use in debriefing the operator or in any contemplated enforcement investigation.

G. Debrief the Operator. Discuss the positive aspects of the operation and any problems or areas of concern. If the operation was unsatisfactory, advise the operator that an enforcement investigation may be pending.

H. Operation Unsatisfactory. If operation was not in compliance with the approved plan but safety was not derogated, send the operator a letter listing the areas of noncompliance with recommendations that would ensure future compliance (figure 121-1). Place a copy of this letter in the operator's file. If safety was derogated, initiate enforcement action (see chapter 182, Conduct a Violation Investigation).

I. Operation Satisfactory. If the operation was in compliance, return plan to the district office file on the operator.

J. PTRS. Make the appropriate PTRS entry.

K. Coordination with CHDO. If the operation was conducted outside the operator's CHDO, send a copy of the congested area plan and any other documentation to that office. If an enforcement investigation is begun, keep the CHDO up-to-date on the investigation's progress.

4. TASK OUTCOMES. Completion of this task results in either:

A. An indication in the district office file of a satisfactory congested area operation, or

B. An indication in the district office file of an unsatisfactory congested area operation.

5. FUTURE ACTIVITIES.

A. Note any safety considerations which may be necessary in future congested area plan approvals at the location of the operator.

B. Possible enforcement action if the operator did not comply with the approved congested area plan.

FIGURE 121-1
LETTER TO OPERATOR INDICATING ITEMS OF UNSATISFACTORY CONGESTED AREA
OPERATIONS AND METHODS OF IMPROVEMENT.

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to inform you of certain areas of operation observed on [*date*] at [*location*] that were not in compliance with the approved congested area plan required by Title 14 of the Code of Federal Regulations part 137.

During application operations, a wind shift occurred that caused turbulence and eddies near buildings that interrupted the equal coverage of the agent being dispensed. This wind shift may have caused unwarranted drifting of spray onto adjacent [*wildlife*], [*crops*], [*water, etc.*].

It is recommended that in future congested area operations, a means of warning of wind shifts be considered, as smoke pots, radio communication with surface observers or closer attention to indications such as leaf movement on nearby trees and wave activity on nearby ponds.

No enforcement action is contemplated, and I hope this information is helpful.

Sincerely,

[*Principal Operations Inspector's signature*]

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CHAPTER 122. INSPECT A PART 137 SATELLITE SITE/FACILITY

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE: 1635

2. OBJECTIVE. The objective of this task is to determine that agricultural aircraft operations conducted at a satellite site conform to the Title 14 of the Code of Federal Regulations (14 CFR) and the operator's certificate. Successful completion of this task results in an indication of satisfactory or unsatisfactory in the district office file on the operator.

3. GENERAL.

A. Definition. A satellite site is any job site other than the main base of operations; for example, a dirt strip, a field, or a seldom used job site.

B. Need for Satellite Site Inspection. The need to inspect an operator's satellite site may be a result of programmed surveillance. The inspection may also be in response to a complaint about an operator (see chapter 182, Conduct a Complaint Investigation).

4. INSPECTOR SAFETY CONSIDERATIONS.

The nature of agricultural chemicals is that they may be toxic. (See chapter 115, Introduction to part 137 Related Tasks.) Inspectors must take every precaution to ensure that they are not contaminated by exposure or spillage.

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SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of 14 CFR part 137 and Federal Aviation Administration (FAA) policies and qualifications as Aviation Safety Inspector (ASI) (operations).

B. Coordination. This task may require coordination with the airworthiness unit

2. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- 14 CFR parts 1, 61, 91, and 137
- Program Tracking and Reporting Subsystem (PTRS) Procedures Manual (PPM)

B. Forms.

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet

C. Job Aids.

- Satellite Site Inspection Job Aid (figure 122-2)
- Agricultural Pilot inspection Job Aid (figure 122-3)
- Agricultural Aircraft Inspection Job Aid (figure 122-4)
- Sample letters and figures

3. PROCEDURES.

A. Schedule Inspection. Coordinating with airworthiness, schedule a date and time for the inspection. Decide whether this inspection will be done with or without notice to the operator.

(1) If the inspection is to be conducted with notice to the operator, notify the operator, by telephone or in writing.

(a) If the operator is notified by telephone, record the results on FAA Form 1360-33, and place it in the operator's file.

(b) If the operator is notified in writing or the telephone call is confirmed in writing, refer to figure 122-1.

(c) Review the operator's district office file.

(2) If the inspection is to be conducted without notice to the operator, review the district office file on the operator.

B. Review Operator's File. Check the district office file on the operator for previous violations, complaints; accidents, incidents, and other inspection reports. Note any areas which require special scrutiny.

C. PTRS. Enter the appropriate PTRS code to open the task.

D. Job Aids. Use the Satellite Site Inspection Job Aid (figure 122-2), the Agricultural Pilot Inspection Job Aid (figure 122-3), and the Agricultural Aircraft Inspection Job Aid (figure 122-4) during the inspection.

E. Regulatory Considerations. Observe operations at the satellite site for compliance with the appropriate sections of part 137, subparts B, C, and D.

F. Inspection Satisfactory. If the inspection is satisfactory, note the outcome on the job aid.

G. Inspection Unsatisfactory.

(1) If the inspection is unsatisfactory, note the unsatisfactory items on the job aid. Confirm them in writing with the operator (figure 122-5).

(2) Initiate an enforcement investigation as appropriate.

H. Debrief Operator.

(1) Compliment the operator on all satisfactory items or areas where compliance standards were exceeded (e.g., company policy requires use of crash helmets).

(2) Discuss any unsatisfactory items and how to improve them.

(3) Discuss any unsatisfactory items which may require an Enforcement Investigative Report (EIRS) and the normal enforcement action process, if applicable.

I. Inspection Reports. Place the job aid, any reports, and correspondences in the district office file on the operator.

J. PTRS. Make the appropriate PTRS work entries for:

- (1) Surveillance/inspection,
- (2) Any open items, and
- (3) Enforcement action.

K. Airworthiness Deficiencies. If airworthiness deficiencies exist and an airworthiness inspector was not present, notify the principal airworthiness inspector or the airworthiness unit supervisor.

L. Other District Office Information. If applicable, mail a copy of the inspection report and other documentation to the operator's Certificate-Holding District Office (CHIDO).

4. TASK OUTCOMES. Completion of this task results in either:

A. Placing an indication in the district office file on the operator that the inspection was satisfactory, or

B. Placing an indication in the district office file on the operator that the inspection was unsatisfactory.

5. FUTURE ACTIVITIES.

A. Depending upon the outcome of the inspection schedule the next inspection as programmed or earlier as necessary.

B. Follow-up on open items.

C. Possible enforcement investigation if the inspection revealed a violation of the 14 CFR or the conditions of the operating certificate.

FIGURE 122-1
LETTER CONFIRMING DATE, TIME, AND LOCATION OF SATELLITE SITE INSPECTION

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to confirm our telephone conversation on [*date*] to the effect that an inspection of your operations will be conducted at [*location*] on [*date of proposed inspection*]. Enclosed is a copy of the inspection aid that will be used to assist in determining whether this operation is in compliance with Title 14 of the Code of Federal Regulations part 137.

Should you have any questions concerning this inspection or will not be available on the above date, please notify this office [*telephone number*].

Sincerely,

[*Principal Operations Inspector's signature*]

**FIGURE 122-2
SATELLITE SITE INSPECTION JOB AID**

NAME AND ADDRESS OF OPERATOR		CERTIFICATE NUMBER	DATE OF INSPECTION		
LOCATION OF INSPECTION		INSPECTORS			
ITEM INSPECTED		14 CFR REF	SAT	UNSAT	N/A
1. Private operator meets appropriate requirements.		§ 137.19(b)(d)(e)			
2. Commercial operator meets appropriate requirements.		§ 137.19(c)(d)(e)			
3. Operator has copies of 14 CFR parts 91 and 137 (recommended).		not required			
4. Location of nearest poison control center known (recommended).		not required			
5. Aircraft inspection.		§ 137.53(c) or § 91.405			
6. Restricted aircraft operating limitations.		§ 91.313			
7. Weight placard on hopper.		not required			
8. Airman certificates and pilot qualifications.		§§ 137.19, 137.41			
9. Aircraft equipped for dispensing.		§§ 137.19(d), 137.31(a)			
10. Shoulder harness.		§§ 137.31(b), 137.42			
11. Helmet - DOT/MIL SPEC (recommended).		not required			
12. Facsimile of certificate on board each aircraft used.		§ 137.33(a)			
13. Airworthiness and registration certificates inspected.		§ 137.33			
14. Private operator complies with limitations.		§ 137.35			
15. All personnel aware of duties and responsibilities.		§ 137.41(a)			
16. Supervisors meet knowledge and skill requirements.		§ 137.19(e)			
17. Pilot-in-command appropriately certificated for operation.		§ 137.41(c)			
18. Pilots have competency letters or logbook endorsements.		§ 137.19			
19. Operating name same as business name.		§ 137.55			
20. Pilots meet knowledge and skill requirements.		§ 137.19(e)			
21. Operator's address same as on file.		not required			
22. Other items.					

FIGURE 122-2
SATELLITE SITE INSPECTION JOB AID - Continued

[illegible]

[illegible]

For pilot certificate (GR), use: P-Private, C-Commercial, A-Airline Transport.

FIGURE 122-4
AGRICULTURAL AIRCRAFT INSPECTION JOB AID

[illegible]

FIGURE 122-5
LETTER CONFIRMING ANY UNSATISFACTORY ITEMS

[FAA Letterhead]

[Date]

[Operator's name and address]

Dear [operator's name]:

This letter is to confirm those items that were unsatisfactory at the satellite site inspection conducted at [location] on [date] and the present status of those items.

[The inspector should list each item and indicate:

- *Whether sufficient corrective action has been taken by the operator;*
- *that enforcement action may be initiated if no corrective action is taken by the operator ; and*
- *If a follow-up inspection is required to determine if corrective action has been completed, and when that inspection will take place.]*

Sincerely,

[Principal Operations Inspector's signature]

APPENDIX 1. ACRONYMS AND ABBREVIATIONS

This appendix contains acronyms and abbreviations for both old as well as new General Aviation terms that are used throughout this Handbook. Inspectors can refer to the following alphabetical listing of frequently used acronyms and abbreviations and their meanings when using this Handbook.

14 CFR	Title 14 of the Code of Federal Regulations	CFI	certificated flight instructor
49 U.S.C.	Title 49 of the United States Code	CHDO	certificate holding district office
A/FD	Airport/Facility Directory	CIRE	commercial and instrument rating examiner
AC	Advisory Circular	CMO	Certificate Management Office
ACCSS	air carrier cabin safety specialists	CPL	commercial pilot license
ACE	aerobatic competency evaluator	CPM	certification project manager
ACO	Aircraft Certification Office	CRW	canopy relative work
ACR	airman certification representative	DH	decision height
ADF	automatic direction finding	CTA	control areas
AFSS	automated flight service station	DME	distance measuring equipment
AFTN	aeronautical fix telecommunication	DOD	Department of Defense
AH	alert height	DPE	designated pilot examiner
AGL	above ground level	EAA	Experimental Aircraft Association
AIDS	Accident Incident Data Subsystem	EIR	Enforcement Investigation Report
AIP	Aeronautical Information Publication	EIS	Enforcement Information Subsystem
ARFF	Aircraft Rescue and Fire Fighting Equipment	FAA	Federal Aviation Administration
ASI	aviation safety inspector	FCC	Federal Communications Commission
AST	aviation safety technician	FD	flight director
ATC	air traffic control	FDC	flight data center
ATP	airline transport pilot	FIE	flight instructor examiner
ATPE	airline transport pilot examiner	FIR	flight information regions
BFA	Balloon Federation of America	FIRC	flight instructor refresher clinic
CAN	Center Area NOTAM	FL	flight level
CAR	Civil Air Regulations	FM	flight manual
CASFO	Civil Aviation Security Field Office	FMCS	flight management computer systems
CE	commercial pilot examiner	FMS	flight management system

APPENDIX 1. ACRONYMS AND ABBREVIATIONS—Continued

FOI	fundamentals of instructing	LORAN	long-range navigation
FSAS	Flight Standards Automation System	LRN	long-range navigation
FSDO	Flight Standards District Office	LRNS	long-range navigation system
FSS	flight service station	MC/FPE	military competency/foreign pilot examiner
FTD	flight training device	MEL	minimum equipment list
GPS	global positioning system	MLS	microwave landing system
GSGC	Ground School Graduation Certificate	MNPS	Minimum Navigation Performance Specification
GTD	ground training device	MSL	mean sea level
HAZMAT	hazardous material	NAS	National Airspace System
HF	high frequency	NAT	North Atlantic
HUD	heads-up display	navaid	navigational aid
IAP	instrument approach procedures	NDB	nondirectional beacon
ICAO	International Civil Aviation Organization	NDPER	National Designated Pilot Examiner Registry
ICAS	International Council of Air Shows	NEB	National Examiner Board
IFO	International Field Office	NFDC	National Flight Data Center
IFP	Instrument Foreign Pilot	NM	nautical miles
IFR	instrument flight rules	NOTAM	Notice to Airmen
IGA	international general aviation	NTSB	National Transportation Safety Board
IIC	inspector-in-charge	OCA	oceanic control areas
ILS	instrument landing system	OJT	on-the-job training
IMC	instrument meteorological conditions	PAI	principal avionics inspector
INS	inertial navigation system	PCA	primary category aircraft
IRA	Instrument Rating Airplane	PE	private pilot examiner
IRS	inertial reference systems	PIC	pilot-in-command
ISIS	Integrated Safety Information Subsystem	POI	principal operations inspector
ISS	inertial sensor system	PPE	proficiency pilot examiner
JAR	Joint Airworthiness Requirements	PPM	PTRS Procedures Manual
LAHSO	land-and-hold-short operations		
LOA	letter of authorization		

APPENDIX 1. ACRONYMS AND ABBREVIATIONS—Continued

PTRS	Program Tracking and Reporting Subsystem	TC	type certification
PTS	practical test standards	TCDS	type certificate data sheet
RAIM	receiver autonomous integrity monitoring	TCE	training center evaluator
RVR	runway visual range	TCO	training course outline
RVSM	Reduced Vertical Separation Minimum	TSO	technical standard order
SA	selective availability	USNOF	United States NOTAM Office
SFAR	Special Federal Aviation Regulations	USPA	United States Parachute Association
SIC	second-in-command	VFR	visual flight rules
SODA	Statement of Demonstrated Ability	VHF	very high frequency
SOIR	simultaneous operations on intersecting runways (replaced by LAHSO)	VIS	Vital Information Subsystem VLA
SPG	Special Planning Group	VLF	very low frequency
STC	supplemental type certificate	V_{MC}	minimum controllable airspeed
TAF	terminal weather forecasts	VMC	visual meteorological conditions
		VOR	VHF omni-directional radio range
		V_{REF}	approach speed

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APPENDIX 3. GENERAL AVIATION HANDBOOK BULLETINS

This appendix contains the uniform resource locator (URL) where current handbook bulletins for general aviation (HBGA) as of 7/30/02 are listed. All current/amended bulletins will be incorporated into the handbook during the normal Change cycle. HBGA's are available on the Internet World Wide Web AVR Home Page at URL <http://www.faa.gov/avr/afs/hbga/hbgal.htm>.

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APPENDIX 4. GENERAL AVIATION FLIGHT STANDARDS INFORMATION BULLETINS

Flight Standards Information Bulletins (FSIB) address issues requiring action, special emphasis programs, and time critical and/or temporary concerns. The FSIB enables the Flight Standards Service to disseminate information quickly to the community. The FSIB does not replace the handbook bulletin. However, information contained in FSIBs may be incorporated directly into handbook text. FSIBs are available on the Internet World Wide Web AVR Home Page at URL <http://www.faa.gov/avr/afs/fsga/fsgal.htm>.

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